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Hints on the Pronunciation of Sanskrit and Vernacular Words

a stands for अ and sounds like *u* in *come*.
ā ,, ,, आ ,, ,, ,, *a* ,, *far*.
i ,, ,, इ ,, ,, ,, *i* ,, *bird*.
ī ,, ,, ई ,, ,, ,, *ee* ,, *feel*.
u ,, ,, उ ,, ,, ,, *u* ,, *full*.
ū ,, ,, ऊ ,, ,, ,, *oo* ,, *cool*.
ṛi ,, ,, ऋ ,, may be pronounced like *ri*.
e ,, ,, ए ,, sounds like *e* in *bed*, only longer.
o ,, ,, ओ ,, ,, ,, *o* ,, *note*.

' (apostrophe) stands for ऽ (elided *a*).

ṅ stands for ङ्, ñ for ञ् and ṇ for ण्, and all the three may be pronounced like *n*.

ṭ and ḍ stand for ट् and ड् and are hard like *t* and *d* in English.
t ,, d ,, ,, त् and द् and are soft as in French.
ḷ stands for ळ and sounds somewhat like *r* in *bird*.
v ,, ,, व् ,, ,, like *w*.
ś ,, ,, श् ,, ,, ,, *sh*.
sh ,, ,, ष् ,, may be pronounced as in English.
ṁ ,, ,, ं (*anusvāra*) and sounds like *ng*.
ḥ ,, ,, : (*visarga*).

The rest of the consonants sound as in English.

Whenever there is any difficulty, the reader is advised to pronounce the words in English, ignoring the diacritical marks, if any.

N.B. Diacritical marks have not generally been used in names of persons belonging to recent times as well as in well-known geographical names.

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LANDMARKS IN INDIAN CULTURE





UMA

By Abanindranath Tagore
By permission of the artist

EVOLUTION OF RELIGIO-PHILOSOPHIC CULTURE IN INDIA

PREFACE

I propose to trace in this chapter, in a very brief outline, the history of the religio-philosophic culture in India, from the time when we meet with its rude beginnings in the lower Indus Valley down to the age of Ramakrishna Paramahamsa. A word of apology and explanation is necessary for venturing upon this difficult and formidable undertaking. Indeed I would be the last person to do so, were it not for the fact that the volume before us contains a detailed treatment, by experts, of the various essential phases of this culture, and my task is limited to a rapid survey of the whole field, assigning proper places to the individual topics in a general plan. The jewellers have cut and shaped the precious stones and I have only to knit them together by means of a thread.

Even this comparatively humble task is beset with difficulties. Sufficient data are lacking to enable us to follow even with a tolerable degree of certainty the rise and development of the various religious movements and philosophical schools in India. Opinions differ widely, and the differences are accentuated, and not unoften embittered, by sectarian jealousy and fanaticism. Amid the passions and prejudices that have slowly gathered force, it is not easy to get a detached view of things, which is essential to the writing of a historical survey of religious growth. The Indians are particularly sensitive in any matter concerning their religion.

Religion, in its very essence, is based more on intuition and emotion than a rational attitude of mind, and it is inspired and fed by faiths and beliefs rather than reason and arguments. While this offers no great difficulty in appreciating the essence of any particular religious belief, it is a standing obstacle to any historical interpretation of it, which can only proceed on the basis of reason and reason alone. In writing this outline, I have followed mainly the views of modern secular writers, trained in the Western method of scholarship, rather than the accredited exponents of the various religious movements whose names are justly held in the highest veneration by all of us. If we seek to dive deep into the religious mysteries, we can do no better than follow their unerring judgement and unique experience. But if we propose to follow the more

matter-of-fact course of tracing the origin and development of the different religious systems, they cannot be our unfailing guides. For a proper appreciation of the beauty of the Tajmahal we can do no better than turn to the poets and artists, but for an idea of its nature and origin and a proper estimate of its value we have to adopt as our guide the modern historians of the Mughal period.

HISTORICAL SUMMARY

Before we begin a review of the religio-philosophical culture of India it will be well to give a very brief outline of the political history of the main epochs into which we have broadly divided the subject.

I. First, we begin with the period which extends from the dim past to the invasion of the Aryans. Primitive peoples of the Palæolithic and the Neolithic age peopled India during this period, but we know very little of them. Recently the remains of a civilization of the people who lived in the Indus Valley in the third millennium B.C. have been unearthed at Mohenjo-daro (Sindh), Harappa (Punjab) and some other places in the neighbourhood. These people may or may not be identical with the Dravidians who lived in the last part of this period and are now represented by peoples speaking Tamil, Telugu, Kanarese, Malayalam and allied languages.

II. Next came the Aryans. The date of their immigration into India is a matter of dispute, but the period 2000-1500 B.C. may be regarded as the most probable. Some scholars would, however, push it further back, while others would bring it much lower down.

At first the Aryans settled in the Punjab and this stage is reflected in the *Ṛig-Veda Saṁhitā*. But gradually they pushed further to the east and south. By the time the Brāhmaṇas and the Upanishads were composed, they had advanced as far as Videha or Bihar in the east and the Vindhyas in the south, even overstepping this mountain barrier in certain directions. They established many kingdoms, among which the Kuru kingdom on the upper valley of the Ganges and Jumna was the most famous in the Brāhmaṇa period. We have no detailed information regarding the political history of this period which was marked by a struggle for supremacy among the different States, culminating in the Great War which forms the nucleus of the story of the *Mahābhārata*. The date of this war may be provisionally placed at about 1000 B.C. For a long time after that war Northern India was divided into a large number of States, some of which occasionally rose into prominence.

Among these we may mention, besides Kuru, the kingdoms of Kāśī, Kośala and Videha.

III. For the next period extending from 600 B.C. to 300 A.D. we possess more detailed knowledge. At the outset we find Northern India divided into a large number of States, both great and small, and monarchical and republican. Sixteen of these States, and a number of small republican clans are specifically mentioned in the Buddhist and Brāhmaṇical literature. In addition to Kośala, and the powerful republican State of the Lichchhavis which had taken the place of the old kingdom of Videha, three new kingdoms, viz. those of Magadha, Vatsa and Avantī, with their capitals at Pāṭaliputra (Patna), Kauśāmbī (Kośam near Allahabad) and Ujjayinī, come to the forefront. Among the small republican States may be mentioned those of the Śākyas and Mallas with their capitals respectively at Kapilāvastu (Nepal Terai) and Kuśīnagara (near Gorakhpur).

The fifth century B.C. is marked by a struggle for supremacy which culminates in the complete ascendancy of Magadha. Under the Śaisunāga dynasty it began its imperial career by conquering the small kingdom of Aṅga on the east and the powerful republican clan of the Lichchhavis on the north. It then entered into a protracted war with Kośala and finally reduced its power. One by one all the important States were absorbed in the growing kingdom of Magadha till by the middle of the fourth century B.C. the whole of Northern India, excluding the Punjab and Sindh, formed one united empire under the Nanda kings of Pāṭaliputra. The empire was still further expanded by the Mauryas who succeeded the Nandas (321 B.C.). Chandragupta, the founder of the dynasty, was no doubt helped in his task by the devastating raids of Alexander the Great (327-325 B.C.) in the Punjab and Sindh which brought the need of political unity home to the suffering millions. By his successful struggle against Seleucus, the great general and successor of Alexander in his Asiatic dominions, Chandragupta extended his dominions still further to the west up to Herat. Gradually the Maurya empire pushed its frontiers further to the south, and during the reign of Aśoka (270-230 B.C.), the grandson of Chandragupta, its southern boundary was fixed along the Pennar river, approximately at the latitude of Nellore.

By following an aggressive imperial policy the small kingdom of Magadha had developed into a mighty all-India empire. But the policy of blood and iron was not suitable to Aśoka who embraced Buddhism

and spent his whole life and energy in an organized missionary propaganda on its behalf. It led to the spread of that religion all over the world. But the pacifist policy of Aśoka produced its inevitable results in the political field. The military strength of the empire was sapped and it fell to pieces. The Greeks (from Bactria), the Parthians, the Śakas and the Kushāṇas poured in millions into India and established political supremacy in the west and north-west. The rest of India was divided into a number of small kingdoms. The political disintegration and foreign domination were perhaps the price that India had to pay for the religious propaganda of Aśoka. After five hundred years of this chronic misery (200 B.C. to 300 A.D.) the Guptas rose to power (c. 320 A.D.) and again established a mighty empire.

IV. For the next period, from 300 A.D. to the Muslim conquest, we can only touch upon the chief landmarks. The Gupta empire dominated the whole of Northern India for nearly two centuries. After its downfall, mainly caused by the Hūna invasions, successive attempts were made by Yaśodharman (c. 530 A.D.), Śaśāṅka (600 A.D.), Harshavardhana (606-647 A.D.), Yaśovarman (c. 700 A.D.) and Lalitāditya (c. 730 A.D.) to build up an empire in Northern India. But the imperial fabrics reared by their military genius did not survive their deaths. The Deccan was ruled at first by the Chālukyas (c. 550-753 A.D.) and then by the Rāshṭrakūṭas (753-973 A.D.). The Rāshṭrakūṭas tried to establish an empire in Northern India, but met with two rival powers, the Pālas of Bengal and the Gurjara-Pratīhāras of Rajputana and Kanauj. Each of these three powers succeeded for a time in building up an empire, but the triangular contest which lasted for nearly two hundred years (750-950 A.D.) exhausted their energies and paved the way for the successful raids of Sultan Mahmud (1000-1030 A.D.) culminating in the Muslim conquest of the Punjab. Although there was a respite for a century and a half, and two powerful dynasties, the Gāhaḍavāls and the Chohāns, built up powerful kingdoms during this period, the final conquest by the Muhammadans towards the end of the twelfth century A.D. extinguished the Hindu political power in Northern India.

In the Deccan the Rāshṭrakūṭas were supplanted by the Later Chālukyas (973-1191 A.D.) and after two hundred years their dominions were divided among the Yādavas of Devagiri and the Hoysalas of Dorasamudra.

In South India the Pallavas were the dominant power till the ninth century A.D. when their position was taken by the Cholas. They conquered the whole eastern coast of India from Bengal to Ceylon and even the over-sea dominions of Malay Peninsula and Sumātrā. But their power declined in the thirteenth century A.D.

By the beginning of the fourteenth century A.D. all these States in the Deccan and South India were conquered by Alauddin Khilji.

V. The Muslim power was first established in India by the Turks at the end of the twelfth century A.D. The Turkish Sultans of Delhi ultimately conquered the whole of India. But a succession of revolts leading to change of dynasties, and finally the invasion of Tamerlane broke the solidarity of their power and the Mughals conquered India in the sixteenth century A.D. The Mughal rule lasted for nearly two hundred years, after which their empire broke up into a number of independent States. This ultimately paved the way for the British conquest in the nineteenth century.

The Hindu rule was not altogether extinguished during the Muslim domination. The flourishing kingdom of Vijayanagar in South India (*c.* 1350-1565 A.D.) and the mighty empire of the Mārāṭhās in the Deccan (*c.* 1650-1818 A.D.) kept alive their power and authority. In Northern India the Rājputs maintained their independence for a fairly long period and never lost their internal autonomy.

Lastly, we may refer to the Śikhs. Originally a religious sect founded by Nānak, the Śikhs rose to be a great military power towards the end of the Mughal rule. They established political authority over the Punjab and Kashmir at the beginning of the nineteenth century. But by the middle of the century their power was thoroughly crushed by the British.

VI. The defeat of the Mārāṭhās in 1818 and of the Śikhs in 1849 completed the supremacy of the British in India. The Sepoy Mutiny of 1857 was the last organized effort of the Indians to throw off the British yoke. With the suppression of that revolt the British authority in India has been established on a secure foundation. Its unquestioned domination over the whole of India has brought peace and unity after centuries of struggle.

After this very brief survey of the different epochs of Indian history we may now proceed to discuss the religio-philosophic culture which distinguished each of them.

I. PRE-ARYAN PERIOD (3000 B.C.-1500 B.C.)

The beginnings of religion in Indian society have been pushed back by two thousand years or even more by the discoveries at Mohenjo-daro. Mohenjo-daro—"Mounds of the dead"—is the local name of a high mound situated in the plains of Larkana district in Sindh in a narrow strip of land between the main bed of the Indus river and the western Nara canal. Here a city was built more than five thousand years ago, and was destroyed and rebuilt no less than seven times. The ruins of these cities afford us a glimpse of a civilization which was indeed of a very high order at least from the materialistic point of view. The people who lived in these cities cannot be definitely affiliated to any known race of men in India. It is certain, however, that they had long emerged from primitive barbarism and developed an urban life with all its amenities. Of their religious culture some traces are left in their icons which include the mother-goddess, the phallus, and a male god who has been regarded as Śiva. In the absence of any written document our knowledge of this religion must necessarily remain vague, but there are enough indications that the worship of Śiva in the form of phallus, which is a prominent feature in later Hinduism but is condemned in the Vedas, must be traced to this source. Once this is conceded, it is easy to assume that many traits of later Hinduism, specially those which cannot be directly traced to the Vedas, might have been a legacy of these unknown people. Their cult of the mother-goddess may not be exactly the same as Śakti-worship of later days, but both seem to be inspired by the same fundamental belief in a female energy as the source of all creation. Traces of a *bhakti*-cult (devotion to a personal God) and even of some philosophical doctrines like Metempsychosis have also been found in Mohenjo-daro. These are, no doubt, matters of dispute, but the cumulative effect of the discoveries at Mohenjo-daro and the neighbouring regions may be summed up in the form of the following general conclusions:

1. That some fundamental ideas of Hinduism may be traced as far back as the third millennium B.C.

2. That the theistic worship of Śiva and Śakti may be regarded as the oldest form of Hindu religion.

This old religion and culture was widely spread in Sindh, Baluchistan and parts of the Punjab. How and when it receded to the background is not definitely known to us. It is generally held that the influx of the Aryan race into India is the cause of the downfall of this older culture

and civilization of the Indus Valley. In spite of some uncertainties, this must be regarded as the only satisfactory hypothesis at the present state of our knowledge.

II. VEDIC PERIOD (1500-600 B.C.)

The civilization of the Aryans and particularly their philosophical thought and religious practices during the first thousand years are known to us from sacred books collectively known as the Vedas. This term denotes not any particular book, but the whole mass of literature produced by the Aryans during the first thousand years or more of their settlement in India. Although definite dates cannot be assigned to the different texts, it is possible to give a general idea of their chronological sequence. The Saṁhitās, Brāhmaṇas, Āraṇyakas and Upanishads represent the four successive stages in the development of Vedic literature. The *Ṛig-Veda Saṁhitā*, the earliest text, may be referred to about 1500 B.C. while the principal Upanishads were composed by 600 B.C. Between these two extreme dates we have to put all the Saṁhitās, Brāhmaṇas, Āraṇyakas and the principal Upanishads.

In the *Ṛig-Veda Saṁhitā* we first come across the ideas of definite gods, as a normal evolution from the striking phenomena of nature. The same Saṁhitā shows that the development of the Aryan religion and philosophy proceeded along two well-marked directions. On the one hand we find the idea of propitiating the different gods by means of worship, which led to the religious sacraments known as *yajña* or sacrifice. On the other hand there was developed a more philosophic conception about the nature of these gods which culminated in the idea that all these gods are but the manifestations of a higher spirit. The later Vedic literature saw a further development in these directions. The Brāhmaṇas developed the ritualistic side by elaborating endless mechanical details of the *yajña* while the philosophical ideas were developed in the Upanishads.

The Upanishads are works of various authors living in different ages. They do not present a coherent or consistent system of philosophy. They are the utterances of spiritually minded people who obtained glimpses of the highest truths by earnest meditation. Their process is intuitive rather than logical and their object is to satisfy the natural yearnings of the human mind for a knowledge of the ultimate reality about God, man and the world around us. The answers given to these questions are many, and it is not always easy to say definitely what the

teachings of the Upanishads as a whole are. The hints, suggestions, guesses and implications contained in them are so many that in subsequent ages they have been quoted as authority by the founders of almost all the religious and philosophical systems in India.

But in spite of the mystic character of the Upanishads, certain fundamental conceptions clearly emerge out of the chaotic mass of spiritual and metaphysical thoughts. The first and foremost is the idea of one all-powerful, all-pervading, self-existent, eternal, and incomprehensible Absolute (Brahman) in whom all creatures find their origin and dissolution.

Secondly, the Upanishads lay stress on the miseries of life, which are perpetuated by transmigration or rebirth due to our *karma* or actions. But they pin their faith on the ultimate hope of deliverance (*mukti*) which means a cessation of miseries and enjoyment of eternal bliss. This can only be obtained by a true knowledge of the Universal Spirit or Soul (Brahman). Such knowledge can only be derived by purity of life and intense meditation (*nididhyāsana*). By implication, if not by express mention, they deny that the ritualistic sacrifices (*yajña*) can achieve the same result. Lastly, the Upanishads elaborate the idea of the eternal human soul, as apart from the body, and, by a bold flight of imagination, regard the individual human soul as identical with the Universal Soul or God. When true knowledge comes by meditation, the individual souls merge in the Universal Soul as rivers merge in the ocean. A solution was thus offered of the problems of life and death and of God and man, which are at the root of all philosophy and religion. It is a matter of common knowledge that these fundamental doctrines of the Upanishads underlie every system of religion and thought in India.

In spite of the profundity and brilliance of Upanishadic ideas they cannot be regarded as sufficient for the moral or religious needs of man. In the first place, they could make their appeal only to the intelligentsia, but fell flat on the average man to whom the attainment of such a profound knowledge appeared as a Utopian ideal. Secondly, while the *Ṛig-Veda Saṁhitā* showed an analytic process in discovering one great God behind the visible phenomena of nature, the Upanishads follow from the beginning an intuitive method. Their conclusions were not based on an intelligible chain of reasoning and arguments, but held out merely as the experience or realization of great minds. They were, therefore, to be accepted on faith. Thirdly, although by implication they denied

the efficacy of ritualistic *yajña* for the purpose of salvation, they prescribed no substitute for it, which an average man could normally pursue for developing his religious life.

Thus while the Upanishadic philosophers soared to a dazzling height and shaped the line on which Indian thoughts were to be moulded in later years, they failed to satisfy all the normal cravings of the human heart and the legitimate needs of the human mind.

III. THE AGE OF REVOLT (600 B.C.-300 A.D.)

The age that followed the early Upanishads saw new developments in religious thoughts with a view to removing these deficiencies. They started with the Upanishadic teachings as their background, but proceeded in different directions to build up different systems of religious belief. The chief characteristics which distinguish them may be summed up as follows:

1. Belief in a personal God to be worshipped with devotion (*bhakti*) rather than an impersonal and absolute God (Brahman) to be realized through meditation and knowledge.

2. Broad practical view of everyday life, laying stress on morality and discounting the metaphysical discussions about God and soul. Emphasis is laid on the control of will and emotions, and the right actions of a man are regarded as the only means to his salvation.

3. A rational interpretation of all the problems of human life and an attempt to solve them by a co-ordinated system based on analytical reasoning.

4. Aversion to mechanical sacrificial performances enjoined by the Brāhmaṇas, and regard for the sanctity of animal life.

The germs of these developments no doubt lay in the Upanishads themselves. This is best seen in the rise of the theistic Śaiva system, to the history of which we may now devote our attention.

The god Rudra is mentioned as early as the *Ṛig-Veda* as a terrific god whose wrath had to be appeased by offerings. The idea is further developed in the *Śatarudriya* (*Taittirīya Saṁhitā*) where he is represented both as a malevolent and as a beneficent god. In the latter aspect he was known as Śiva.

In the age of the Upanishads, when the conception of an impersonal God was the prevailing idea, we find the first beginnings of a theistic system in the *Śvetāśvatara Upanishad*. This Upanishad is earlier than the *Bhagavad-Gītā* which quotes a verse and a half from it. It expounds

the characteristic Upanishadic doctrines, but occasionally identifies the Brahman with the god Rudra-Śiva.

"There is only one Rudra," so says this Upanishad, "and they do not recognize another. This God—the great Soul whose work is the universe—always dwells in the hearts of men.

"By meditating on him, by devoting oneself to him, by realizing him, the whole ignorance is dispelled. Knowing Śiva one attains eternal peace...those who know this become immortal" (*Śvet. Up.* III. 2; IV. 16, 17).

Here we find the beginnings of the theistic system which was further developed in the Bhāgavata school. From the conception of an absolute Brahman to that of a personal God whom an average man can love and comprehend, the transition is no doubt easy and almost inevitable. But why the particular god Rudra-Śiva should be chosen for this purpose is not so easy to understand. Long ago Sir R. G. Bhandarkar, after a painstaking analysis of the attributes of Rudra-Śiva, came to the conclusion that this god had a close connection with non-Aryan tribes, and that the element of phallic worship associated with his cult was entirely borrowed from them. The discoveries of Mohenjo-daro, to which reference has already been made above, corroborate this view, and we may now assume, with a tolerable degree of certainty, that Rudra-Śiva was, or was assumed to be, identical with the great God of the pre-Aryan settlers of the Indus Valley, and that, with the large absorption of these people into the Aryan society, he came to occupy a pre-eminent position. The Upanishadic doctrine of an impersonal God was fused with the devotional worship of a personal God, and a beginning was thus made which led to almost revolutionary changes.

These changes were brought about by the Bhāgavatas, Buddhists and Jainas, who all first come into notice about the sixth century B.C. In spite of early opinions to the contrary, it is now admitted by all scholars that all these religious doctrines grew independently in or about this period and their founders were real historical persons. Gautama Buddha is no longer recognized as a solar myth, but a historical personage, born in the republican Śākya clan. The traditional date of his death, viz. 543 B.C., is not accepted by modern scholars. They regard 487 B.C. as a close approximation to the date of his death. As by all accounts he lived for 80 years and became the Buddha at the age of 35, the years 532-487 B.C. may be regarded as the period when the fundamental principles of Buddhism were enunciated by him.

Vardhamāna Mahāvīra, usually regarded as the founder of the Jaina religion, was born in a suburb of Vaiśālī, the capital of the famous republican clan of the Lichchhavis. The traditional date of his birth, viz. 599 B.C., has not been accepted by modern scholars who place it about 539 B.C. He attained supreme knowledge at the age of 42 and died thirty years later. So the effective period of his religious life may be put between 497 and 467 B.C.

But Jainism seems to be much older than this period. The Jainas claim that there were twenty-three prophets (Tīrthaṅkaras) before Mahāvīra, and have woven absurdly exaggerated tales around them. The first prophet, for example, lived several billions of years and his stature was two miles high. Similar claims are made by the Buddhists, though their stories about the six Buddhas who preceded the historical Gautama are not of this absurd character. The germs of all religion may be traced back to inchoate thoughts or speculations of an earlier period, and to this extent we can accept the claims of a higher antiquity advanced by many religious sects. We have no grounds to believe that as a system of religion, with definite dogmas and an established organization, Buddhism existed before Gautama Buddha. As regards Jainism, however, there are clear indications that Pārśvanātha, the twenty-third Tīrthaṅkara, who is reputed to have died 250 years before Mahāvīra, was really a historical person and he founded a religious sect known as Nirgrantha. Mahāvīra belonged to this sect, but gave a decided stamp to it by his own personality. As a historical religion of recognized status with a definite system and organization, we can hardly trace Jainism long before the time of Vardhamāna Mahāvīra.

Although the historical character of Gautama Buddha and Vardhamāna Mahāvīra is now freely admitted, that of Kṛishṇa-Vāsudeva, the founder of the Bhāgavata religion, is still doubted by many. Eminent scholars have held that Kṛishṇa-Vāsudeva was not a human being, but a popular deity—a solar deity according to some, a vegetation deity according to others. But recent researches leave no doubt that Kṛishṇa-Vāsudeva of Mathurā was a human teacher, belonging to the republican Kshatriya clan known as Sātvatas or Vṛishṇis, a branch of the Yādava tribe, which was famous in the age of the Brāhmaṇas. The earliest account of this great teacher is found in the *Chhāndogya Upanishad* where he is represented as the son of Devakī and a pupil of the *ṛishi* Ghora Āṅgirasa. Incidentally the Upanishad has preserved some of the doctrines which Kṛishṇa learnt

from his preceptor. It is a noteworthy fact that these fundamental doctrines reappear in the *Bhagavad-Gītā* which contains the most authoritative exposition of the principles held by the Bhāgavatas.

The reference in the *Chhāndogya Upanishad* shows that Vāsudeva-Kṛishṇa flourished before the sixth century B.C. As to the incidents of his life we know little beyond what has already been stated above.

The popular tales about Kṛishṇa, particularly his amorous relations with the Gopis, are found only in the *Harivaṁśa* and the *Purāṇas*. His association with Rādhā first occurs in still later literature. To derive the life-story of Kṛishṇa from books which were written five hundred to thousand years later is against the elementary principles of historical study. No importance, therefore, attaches to these books, as a source of information for the true life of Kṛishṇa, although they constitute important landmarks for the development of the Kṛishṇa-myth and the evolution of the Vaishṇava religion.

Having now briefly surveyed the historical origin of the three great religious movements, we next proceed to explain their nature and great significance in the evolution of religio-philosophical culture of India.

At the very start we must remember that all these three constitute a revolt, or at least a decided break from the accepted religious creeds of the day. And it is not perhaps a mere accident that all of them originated in the free atmosphere of independent republican clans, the Śākyas, the Lichchhavis and Sātvatas. The history of the world has again and again demonstrated that nurseries of political freedom often tend to develop freedom in the domains of thoughts and beliefs. Besides, all the three clans lived in regions which may be described as the outer fringe of the stronghold of Vedic culture and therefore comparatively free from its rigid hold.

Further, we should remember that these three religious movements were not isolated events, but merely the products of the age. The bold Upanishadic speculations were the outcome of a creative intellect and critical spirit which revolted against the mechanical ceremonials of the Brāhmaṇa age. But freedom of thought and a spirit of enquiry once aroused are not likely to observe any limit, and it is no wonder that the sixth and fifth centuries B.C. saw a great outburst of intellectual activity which defied all traditions and was out to seek truth by new experiments. The result was almost a wild growth of new views and ideas leading to the foundation of numerous sects and religious systems. Some of these, no doubt, displayed a high degree of intellectual, spiritual and moral

fervour, but others proved a victim to unbridled passions and lack of all moral or intellectual discipline. Thus while the tide of free speculations led on the one hand to the rise of the important sects like Buddhism, Jainism, Śaivism and Bhāgavatism, it culminated on the other in a system like that of Chārvāka or immoral practices masquerading in the name of religion.

The revolution was started on a moderate scale by the Bhāgavata religion. It substituted a personal God called Hari in the place of the abstract idea of a universal Soul. Hari, the God of gods was not, however, visible to one who followed the traditional mode of worship, viz. *yajñas* and austerities. He could only be seen by one who worshipped Him with devotion. By an open denial of the efficacy of sacrifices and austerities, denunciation of the slaughter of animals, and stressing the element of *bhakti* (devotion) over abstract knowledge, it constituted a fundamental break from the accepted creeds and beliefs.

Buddhism which represents the other extreme of reaction agreed with the Bhāgavatas in the first two of these important principles, but went to further extremes, both in its disregard for sacrifices and austerities, and in its upholding the sanctity of animal life. Moreover, it differed from the Bhāgavatas in several important points. It did not acknowledge any personal God, or for the matter of that, any supreme God at all. Consequently neither *bhakti* nor metaphysical and abstract knowledge of God had any place in it, and a highly developed, rigid and austere morality was offered as the sole means of attaining salvation. Further, it denied the Vedic literature as a divine revelation and refused to accept the social order of the day, particularly the system of caste. This completed the revolution which was begun by the Bhāgavatas.

The Jainas accepted most of these points, but regarded austerity as the essential means of salvation. Besides, their philosophic conception was different. They believed in eternal individual souls which were denied by the Buddhists. But, unlike the Upanishadic doctrine, they regarded each individual soul as eternal and they had no conception of one eternal Soul in which the individual souls are to be ultimately merged.

The rise of these revolutionary religious sects reacted on the orthodox system and led to the formulation of its doctrines in a more co-ordinated and logical form. The complacent dogmatism of old was rudely shattered by Buddhism and Jainism, which raised anew the fundamental problems of religion and approached them with a new and critical outlook. The activities of the orthodox leaders were roused by

the bold challenge of these sects and they started to set their house in order. They proceeded to do so by two distinct methods. First, they codified and systematized their philosophical and religious doctrines and tried to put them on the unassailable basis of logic and reason. Secondly, they tried to outflank the heterodox systems by accepting those elements which seemed to be the basis of their universal appeal and widespread popularity.

The religio-philosophic culture of the period 400-200 B.C. is the result of this interaction between these contending forces and we may note the following developments as the chief landmarks of the period:

1. The formulation of the six systems of philosophy, viz. Nyāya, Vaiśeshika, Sāṁkhya, Yoga, Pūrva Mīmāṁsā and Vedānta.

Among these the Pūrva Mīmāṁsā is an attempt to give a rational and philosophic interpretation of the Vedic teachings, specially the sacrificial system.

2. Development of Śaivism into a complete theistic system within the orthodox fold.

3. Winning over of the Bhāgavata sect for the orthodox faith by the identification of Kṛishṇa with the Vedic god Vishṇu.

4. Popularization of the remodelled religion and philosophy by means of epics like the *Rāmāyaṇa* and the *Mahābhārata*.

5. Buddhism and Jainism were alone left outside the pale of orthodox culture to continue the struggle. They gradually gained in power and popularity and for a time almost completely overshadowed their rivals. Buddhism spread far beyond the frontiers of India, and ultimately became a world-religion.

These characteristic features, originating during the period from 400 to 200 B.C., continued to mark the religio-philosophic culture for the next five hundred years (200 B.C.-300 A.D.). As they have been adequately dealt with in separate articles in the volume before us, I shall merely content myself with a brief outline indicating their line of development.

1. In India all systems have grown from insignificant beginnings by slow and gradual accretions. The conservative character of the people does not allow anybody to boldly demolish an old structure and build on a new foundation, but makes him patiently preserve the old and modify it by additions and alterations. Thus the philosophical views formulated in the dim past were gradually developed by way of commentaries and interpretations until they were formulated into definite systems in the

shape of philosophical *Sūtras*. The authors of the *Sūtras* should therefore be regarded more as formulators than as originators of the system. The date of the *Sūtras* is a matter of dispute. Generally they are regarded as posterior to Buddhism and anterior to the Christian era and the dates suggested for them range from 400 to 200 B.C. This view is not perhaps very far from truth.

The later development of the six systems also proceeded along the older traditional method. Each system, as it grew, had to silence criticism of its opponents and to offer solutions of new problems. This was done by successive texts each of which professed to be merely a commentary on the preceding. The later philosophers in India were thus content to write merely commentaries, or rather commentaries on commentaries, and never claimed to formulate, far less to found, any original system. Even Śaṅkarāchārya, the greatest philosopher that India has produced so far, wrote merely commentaries on the *Brahma-sūtra*, the *Bhagavad-Gītā* and the Upanishads. It is in this way that Indian philosophy has grown from age to age, becoming a more and more perfect system with each succeeding century. It has been aptly compared to the gradual growth of a baby to a fully developed human form.

Commentaries on the six systems continued to be written till recent times, Rāmānanda Sarasvatī's commentary on the *Yoga-sūtra*, called *Maṇiprabhā*, being written as late as about 1600 A.D. The high position always occupied by these philosophical systems in Hindu minds appears from the fact that the leaders of all religious sects attempted to derive their basic principles from one or other of them. No sectarian religion had a chance of securing prestige so long as it could not at least reconcile its fundamental doctrines with one or other of the philosophical systems.

2. The theistic ideas of Śaivism which we first meet with in the *Śvetāśvatara Upanishad*, are further developed in the *Atharvaśiras Upanishad*. The first reference to a definite religious sect of the Śaivas occurs in Patañjali (2nd century B.C.). The members of the sect were known as Śivabhāgavatas. The more well-known Pāśupata sect is mentioned in the Nārāyaṇīya section of the *Mahābhārata*. Śiva, the husband of Umā, is said to have himself revealed the texts of this school. This implies that the founder of the sect was a human being who was afterwards regarded as an *avatāra* of Śiva. The implication is rendered explicit in later literature like the *Vāyu Purāṇa* (Chap. 23) and the *Liṅga Purāṇa* (Chap. 24). According to these, at the time when

Vāsudeva was born in the Yadu family, Śiva entered a dead body and incarnated himself as a *brahmachārin* by the name Nakulīśa at a place called Kāyāvatāra or Kāyāvardhana, identified with Karvan in Baroda. He had four disciples, namely, Kuśika, Garga, Mitra and Kaurushya. Two stone inscriptions corroborate this story and one of them names the four disciples as founders of the four branches amongst the Pāśupatas.

The recent discovery of an inscription of the Gupta emperor Chandragupta II at Mathurā, dated the year 61 (380 A.D.) enables us to fix with tolerable certainty the date of Kuśika. The inscription tells us that Ārya Uditāchārya, its author, was tenth (in succession) from Bhāgavata Kuśika. Assigning a century for three generations, Kuśika may be placed about the middle of the first century A.D. The date, of course, would be later by a century if we assign four generations to a century.

Now if we take Kuśika as disciple of Nakulīśa, the latter must be placed some time between 75 and 125 A.D. But although this view is supported by later tradition recorded in literary and epigraphic evidences, we must give due weight to the popular tendency to regard the founders of branches as immediate disciples of the original founder of the sect. The authors of the Purāṇas regard Nakulīśa as a contemporary of Vāsudeva-Kṛishṇa, which, of course, is impossible if we accept the date given above. Sir R. G. Bhandarkar interpreted this statement of the Purāṇas to mean that traditionally the Pāśupata system was intended to take the same place in the Rudra-Śiva cult as the Pāñcharātra did in the Vāsudeva-Kṛishṇa cult. Accordingly he referred the rise of the Pāśupata school to about the second century B.C. It must be admitted that there is some force in his argument, and we cannot definitely reject his view on the strength of the newly discovered inscription.

The human figure of Śiva on the coins of Wema Kadphises (middle of the first century A.D.) may be regarded as a figure of Nakulīśa.

3. The religious ideas formulated by Vāsudeva-Kṛishṇa developed into the Bhāgavata system. As in the case of Śaivism, we find a very early account of the system in the Nārāyaṇīya section of the *Mahābhārata*. There it is called *Ekāntika Dharma* and is said to have been revealed by Nārāyaṇa himself. The same text tells us that this *Ekāntika Dharma* was communicated to Arjuna at the beginning of the war. The allusion is, no doubt, to the *Bhagavad-Gītā* which contains the earliest philosophical exposition of this system. The composition of this work may be referred to the period 400-200 B.C. It is not only the most

popular religious work, but is generally regarded as forming the basis of popular Hinduism. But that it truly represents the moderate revolution heralded by the Bhāgavatas, as noted above, will be apparent to anybody who carefully considers its hostile attitude towards the Veda as an infallible authority and the traditional views about the caste system and sacrificial performances. At the same time it is equally clear that it was more conservative in character than either Buddhism or Jainism and its protest against the accepted views and beliefs is less thoroughgoing. As regards ideals of life and ethical principles there is a striking resemblance between Buddhism and the *Gītā*, but by denouncing the ascetic life and the negative attitude of the Buddhists towards metaphysical doctrines, the *Gītā* showed its greater adherence to the old orthodox creed.

It was thus a comparatively easy task to win over this school to the orthodox side. This was effected first by regarding Vāsudeva as an *avatāra* or incarnation of the Vedic god Vishṇu, and secondly by the identification of Vāsudeva with Nārāyaṇa who came to be regarded as the Supreme Being in the later Brāhmaṇical period. It is worthy of note that the first point was not generally conceded, and the second had not taken place at all, when the *Bhagavad-Gītā* was composed. Vishṇu grew to be the Supreme God in the Epic Age and the identification of Vāsudeva with Nārāyaṇa and Vishṇu completed the transformation of the Bhāgavata religion as the great religion of the orthodox Hindus.

Two developments of the Bhāgavata religion, as promulgated in the *Bhagavad-Gītā*, require special notice. The first is the Pāñcharātra system which consists of the worship of Vāsudeva in his fourfold *vyūha* or form. It is not mentioned in the *Gītā*, but forms a characteristic element of the Bhāgavata school. It appears to have been evolved shortly after the *Bhagavad-Gītā* was composed, and not later than second century B.C.

The second development is the story of Kṛishṇa as a cowherd boy, which was perhaps added in the early centuries of the Christian era. There are reasons to believe that the idea was originally based upon the Vishṇu legends in the Vedic literature and subsequently developed by tribes like the Ābhīras. It must be noted, however, that one important element, that of Rādhā, the chief beloved of the cowherd Kṛishṇa, was not added till a considerably later date.

4. The date of the two epics, the *Rāmāyaṇa* and the *Mahābhārata*, is a matter of great uncertainty. The *Mahābhārata* is not a product of

any one age or any one author. From a small nucleus it grew by gradual additions to a voluminous cyclopædia of knowledge and even some independent works like the *Bhagavad-Gītā* and *Harivaṁśa* formed parts of it. From an original heroic poem describing the battle between the Kurus and the Pāṇḍavas it developed into a sacred literature containing long passages on religion, mythology, philosophy, morals, law, politics, geography and various other miscellaneous subjects.

The *Mahābhārata* is not referred to either in the Saṁhitās or the Brāhmaṇas and is mentioned for the first time only in the *Sūtra* literature, e.g. in the *Āśvalāyana Gṛihya-sūtra*, *Sāṅkhāyana Śrauta-sūtra*, *Śāmbhavya-sūtra* and in the grammatical *Sūtras* of Pāṇini. The first named work refers to both *Bhārata* and *Mahābhārata*, evidently referring to the smaller and the larger redactions of the epics. There can be thus little doubt that the nucleus of the epic must be placed about the fifth century B.C. if not even earlier. The date when the *Mahābhārata* assumed its present shape was at one time pushed down to so late a period as the fifteenth or sixteenth century A.D. But inscriptions and literary works prove that already in the sixth century A.D. the *Mahābhārata* had assumed its present compass and was venerated as a religious treatise. We must allow a century or two for the transformation of an admittedly modern secular text into a sacred book of hoary antiquity, and thus the *terminus a quo* for the composition of the *Mahābhārata* may be placed in the fourth century A.D.

The epic, which thus covers a wide period from *c.* 400 B.C. to *c.* 400 A.D., faithfully reflects the religio-philosophic spirit of the age. The portions of the work referring to the worship of Vedic gods like Indra, Agni, etc., belong to the earlier stage and represent the ritualistic religion of the Brāhmaṇas, without any trace of Upanishadic metaphysics or sectarian religion. In a later stage Vishṇu or Śiva takes the place of Indra, and both are regarded as supreme gods. Here we find the theistic religion in a developed form. As already noted, the *Bhagavad-Gītā*, which forms a part of the work, represents an intermediate stage before the theistic religions were fully developed. Thus the development of this popular epic followed closely the lines of the development of religious thoughts, and an originally heroic poem was, on account of its popularity, converted into a Brāhmaṇical work, as a highly valuable means of popular propaganda.

The *Rāmāyaṇa* like the *Mahābhārata* must have been originally a heroic ballad with a tribal hero Rāma as its centre. It is less voluminous

than the *Mahābhārata* and the process of transformations and modifications is less noticeable. It has got the unity of an epic poem, and is less over-burdened with digressions on theology, mythology, and philosophy, such as we find in the *Mahābhārata*. It must have attained its present form long before the last additions were made in the *Mahābhārata*, for not only the complete Rāma story, but even the epic *Rāmāyaṇa* is known to the latter. The beginnings of the *Rāmāyaṇa* may be placed about the same time as those of the *Mahābhārata*. The two epics show a striking resemblance in style, metre and general views of religion and society. There are, however, notable differences, and this may be explained by the locality of their origin. The *Mahābhārata* represents the somewhat primitive and ruder culture of the West, while the *Rāmāyaṇa* reflects the more refined social ideas of the East.

The first and the last Book of the *Ramāyāṇa* are later additions. The bulk consisting of Books II—VI represents Rāma as an ideal hero. The religion described is polytheistic, with a mingling of Vedic gods and non-Aryan divinities. There is no sectarianism and the Vedic sacrifice constitutes the principal mode of worship.

In Books I and VII, however, Rāma is made an *avatāra* or incarnation of Vishṇu and the epic poem is transformed into a Vaishṇava text. The reference to the Greeks, Parthians and Śakas shows that these books cannot be earlier than the second century B.C.

It is impossible to exaggerate the value of the two epics in popularizing the new theistic religions of Śaivism and Vaishṇavism and giving a new turn altogether to the popular forms of Hinduism.

5. Buddhism and Jainism remained outside the pale of orthodoxy, not so much on account of their religious and philosophical views, as of their steady refusal to recognize the sanctity of the Vedas as an infallible authority and their repudiation of the system of caste.

As in the case of the Bhāgavata and Śaiva sects, perhaps some time elapsed after the death of Gautama Buddha and Mahāvīra before their followers organized themselves into regular sects with a systematic philosophy and a body of codified doctrines. Certain it is that none of them wielded considerable power and influence before the end of the fourth or the beginning of the third century B.C.

The patronage of the Nanda kings and the Emperor Chandragupta Maurya gave an impetus to the Jaina religion. During the reign of the latter (*c*. 321-296 B.C.) it spread nearly over the whole of India; but the period of this greatest expansion was also marked by the

beginning of that schism which ultimately (1st cent. A.D.) divided the Jainas into two powerful sects known as the Digambaras and the Śvetāmbaras. The existing canonical literature of the Jainas, called Siddhāntas, was drawn up in a council at Pāṭaliputra in the beginning of the third century B.C. and subsequently revised in another council at Valabhī in the fifth or the beginning of the sixth century A.D. The canon is, however, acccepted only by the Śvetāmbaras. The Digambaras who took no part in the council at Pāṭaliputra deny their authenticity and believe that the real canon is lost.

Buddhism first obtained a dominant position in India under the patronage of the great Emperor Aśoka (*c.* 272 B.C.-230 B.C.), the grandson of Chandragupta. It is now a matter of common knowledge that by his missionary propaganda Buddhism not only spread all over India but even far outside its boundaries, and ultimately became a world-religion, a position which it even now occupies, as its votaries number about one-third of the entire human race.

With the dominance of Buddhism, Jainism lost its stronghold in Eastern India, but found a secure shelter in the west, with powerful centres at Mathurā and Ujjayinī. Buddhism rapidly spread in all corners of India and planted its outposts in Burma, Ceylon, Alexandria and Khotan. By the first century A.D. it had reached China and from China it ultimately penetrated into Korea and Japan. The foreign races like the Greeks and the Scythians who invaded India during 200 B.C.-100 A.D. largely adopted this faith.

The adoption of Buddhism by diverse races with varying types and grades of civilization could not but exert a great influence upon its subsequent history. New tendencies are noticeable since the time of Aśoka which ultimately took a definite shape in the time of Kanishka (*c.* 1st century A.D.). The old and new doctrines are known respectively as Hīnayāna and Mahāyāna. The transition was so gradual that one almost imperceptibly led to the other. Yet some fundamental differences can be easily perceived between the early doctrines of Buddhism as formulated in the Pāli canon (4th and 3rd cent. B.C.), and the principles of Mahāyāna in its fully developed form, as expounded in its Sanskrit texts. The Hīnayānist had no concern for God and regarded Buddha as a perfect man whose precepts and examples are to be followed by each individual for reaching *nirvāṇa* or freedom from bondage, and cessation of existence, practically annihilation. Mahāyānism regarded Buddha as a god, and evolved an elaborate

metaphysics involving a pantheon of gods and goddesses. Devotion to Buddha and worship of his images formed a more essential part than the pursuit of a grim austere life of morality. The ideal is not the state of an Arhat, who reaches the perfect state through his own powers, but that of a Bodhisattva, who stops short of Arhatship in order to help struggling humanity on the path to salvation. The Hīnayāna ideal is egoistic, whereas the Mahāyānists are inspired by love for fellow-beings. Their goal is not annihilation, but one of positive bliss. Consciously or unconsciously the Mahāyāna was making a near approach to theistic systems.

There is little doubt that the transformation of Buddhism is partially due to the impact of the rude uncivilized races that adopted Buddhism. The need of presenting the religion in a form which could easily appeal to their heart and mind could not but alter its character, nor could these races embrace Buddhism without introducing into it many of their superstitious rites and practices. The Mahāyāna had to tolerate them and developed a flexible adaptability which characterized it throughout its history. This attitude brought it great popularity and enabled it to stride in triumph across the whole continent of Asia.

We have some means of testing the relative strength of the different religious sects in India during the period 300 B.C. to 300 A.D. More than fifteen hundred inscriptions belonging to this period have been discovered so far. Of these not even fifty belong to the religious sects other than Buddhism and Jainism. The proportion should not be taken as an exact measure of the relative strength and popularity of the orthodox and heterodox doctrines, because accident must have played a great part in the preservation and destruction of records, and some of the disparity may be due to the habit of engraving numerous records on religious structures, which was more marked in one sect than in another. But even making due allowance for all these factors, no doubt can remain of the preponderating influence of the two heterodox religious sects during the period 300 B.C. to 300 A.D. This view is further strengthened by the fact that if we take the epigraphic records for the five centuries following 300 A.D., we find that the position had almost entirely been reversed, and the orthodox sects like Vaishṇavism and Śaivism now occupy the position of dominance which had hitherto been enjoyed by their heterodox rivals.

IV. THE PAURANIKA AGE (300 A.D. to the Muslim conquest)

The fourth century A.D. may thus be regarded as a turning-point in the religious history of India. Since that date we find the gradual dominance of Brāhmaṇical religion and the steady decline of Buddhism and Jainism. By the twelfth century A.D. Buddhism, as an independent sect, had well-nigh vanished from India while Jainism was almost reduced to the position of a local sect in Western India.

The most important charactertistic features of the religio-philosophic culture of the period may be studied under the following heads:

(*i*) Downfall of Buddhism in India.

(*ii*) Decline of Jainism.

(*iii*) Reconciliation of Vedic faith with sectarianism, and the evolution of synthetic Hinduism.

(*iv*) History of (A) Śaiva, (B) Śākta, (C) Vaishṇava and (D) minor religious sects.

Before we proceed to discuss these in detail a few general observations may be made regarding the religious development of the period.

In the first place it appears from a study of the history of the period that the fortunes of religions depend to no small extent upon the patronage of royal families. At the beginning of the period the Guptas were the leading power and for two centuries they dominated over nearly the whole of Northern India. They were powerful adherents of the Bhāgavata sect, and this undoubtedly was the main factor in the history of its rapid progress and development at the cost of Buddhism. Of the dynasties that succeeded the Guptas in various parts of Northern India, the Later Guptas, the Pratīhāras, the Chandellas, the Maukharis, the Kalachuris, the Vallabhis and the Varman kings of Kāmarūpa were either Vaishṇavas or Śaivas. The Pālas of Bengal were patrons of Buddhism, but their successors, the Senas, were Śaivas and Vaishṇavas. It must be mentioned, however, that the line of difference between Śaivism and Vaishṇavism was not very marked and the official records of the same dynasty bear invocation to either Śiva or Vishṇu. We have also examples of individual kings like Harshavardhana, who, although officially professing Śaivism, was strongly inclined towards Buddhism as Hiuen Tsang informs us. Again in the same family, different kings belonged to different sects, the most typical example being that of Harshavardhana, the kings of which were devotees of the sun-god, Buddha and Śiva.

In the Deccan the early Chālukya kings were patrons of Jainism, but the Brāhmaṇical religions, both orthodox and sectarian, flourished under the later kings. The Rāshṭrakūṭa dynasty also professed Brāhmaṇical religion, though some of the kings patronized Jainism.

In the extreme south Jainism was patronized by the early Pallavas and Hoysalās, but the later Pallavas were Śaivas and the later Hoysalās, most ardent devotees of Vaishṇavism.

This brief, though very incomplete, historical survey would show the gradual loss of royal patronage suffered by both the Jainas and the Buddhists. It is, of course, difficult to say whether the loss of patronage was responsible for the decline of the religions or just the opposite was the case. Perhaps the two causes acted and reacted upon one another. But there is no doubt that the loss of royal favour assured the ascendancy of the Brāhmaṇical and sectarian cults.

Secondly, we must note the rise of a debased element in the religions of the day which is generally, though not perhaps very accurately, referred to as Tāntrikism. Though more closely associated with the Śākta sect, to be noted later, some of its characteristics such as mystic magical beliefs, degraded erotic practices, extreme veneration for the *guru*—all leading to gross indecency and lax morality—are common features to be observed in more or less degree in all the principal religions of the time, except Jainism.

Thirdly, we may note that the worship of images of gods with elaborate rituals and erection of large temples for them become a characteristic feature of the religions of the period.

We may now proceed to discuss in detail the four characteristic features of the period noted above.

I. DOWNFALL OF BUDDHISM

The most potent cause of the decline of Buddhism in India was the loss of royal patronage. In Northern India the patronage of Harshavardhana and the Pāla emperors gave a long lease of life to Buddhism, but with those notable exceptions the other royal families were staunch adherents of the Brāhmaṇical sect. The passing away of the Pālas in the twelfth century A.D. and the destruction of the Buddhist monasteries by the Islamic invaders proved the final death-blow to Buddhism. The monasteries were the chief strongholds of Buddhism, while the strength of the Jainas lay rather in the mass of lay followers. Hence Jainism

survived the downfall of its monasteries while Buddhism perished in its ruins.

The decline of royal patronage was perhaps as much a cause as the result of the growing unpopularity of Buddhism. The chief cause of this unpopularity was the development of those degraded Tāntrika beliefs and rituals which we have noted above. Whatever might have been the original ideal behind it, the form to which it degenerated from the seventh century onwards can only be regarded as travesty of Buddhism. Its worst features were that gross sensuality and carnal passions of man found a religious sanction in it and the result was a moral corruption and systematic debauchery masquerading in the name of religion.

It would be, of course, untrue to say that purer forms of Buddhism did not flourish at the period. But the masses naturally followed what was more suited to their tastes, and their unbridled licentiousness brought odium upon the whole religion, and hastened its decline and downfall.

In addition to these causes another powerful factor was working to the same end. The Mahāyāna form of Buddhism, as we have seen before, made a very near approach to the theistic system. Adaptability was always a great characteristic of Buddhism and its close *rapprochement* to Brāhmaṇical religion was dangerous to its separate existence. The leaders of the Brāhmaṇical religion were not yet too rigid and conservative to let slip any opportunity of capturing the great stronghold of a powerful rival. As in old days Vaishṇavism was won over by the acceptance of Kṛishṇa as an *avatāra* of Vishṇu, so about a thousand years later Buddha was regarded as another *avatāra* of the same God. This well-conceived and bold stroke of policy cut the ground from under the feet of Buddhism which was already steadily losing ground, and the ultimate result was the complete effacement of Buddhism from India as a separate sect. The rigid conservatism of the Jainas which admitted of no change saved them from a similar fate.

II. DECLINE OF JAINISM

Jainism, alone, of all religions, was free from the Tāntrika development. The rigid conservatism, to which it owed this fortune, however, paved the way for its decline, as it failed to keep abreast with the changing spirit of the times. The new rituals and practices of Vaishṇavism, Śaivism and other sects proved too alluring, and gradually Jainism lost its importance in Mysore and Mahārāshṭra where it had exercised a dominant influence for nearly a thousand years. Jainism

has steadily maintained its old character and has chosen to die rather than surrender its essentials. Fortunately it still maintains its hold among a very influential section of the community in Western India.

III. EVOLUTION OF SYNTHETIC HINDUISM

With the decline of Buddhism and Jainism the Brāhmaṇical religion gradually rose into importance. But there was no homogeneity in it. It included orthodox Brāhmaṇism, *i.e.* the remnant of the old Vedic cult, and the different sectarian religions, notably Śaivism, Śāktism and Vaishṇavism. Although these were admitted within the orthodox fold, they still retained their essential characteristics and formed distinct entities.

At the very beginning of the period we notice a systematization of their faiths and beliefs in a number of texts, known as Purāṇas and Smṛitis. The Smṛitis preserve a link with the old *Gṛihya-sūtras*, describing the Vedic rituals and sacrifices. The Purāṇas present the theology of the new sects with the old philosophical and cosmogonical beliefs in the background.

The Vedic orthodoxy was patronized by the Pallavas, Vākāṭakas and other royal dynasties, and the inscriptions of the period contain frequent references to Vedic cults and sacrifices. These are, however, not unoften combined with pure sectarian worship.

Indeed, one of the most important traits of the Brāhmaṇical religion of this period is this spirit of reconciliation and harmony between orthodox and sectarian forms.

Its most notable expression is to be found in the theological conception of the *Trimūrti*, *i.e.* the manifestation of the supreme God in three forms of Brahmā, Vishṇu and Śiva, where Brahmā, the creator, is undoubtedly a pale reflex of the Upanishadic Brahman. The attempt cannot be regarded as a great success. Brahmā never gained an ascendancy comparable to that of Śiva or Vishṇu, and the different sects often conceived the *Trimūrti* as really the three manifestations of their own sectarian god whom they regarded as Brahman or Absolute. Still the spirit of reconciliation bore significant results. Henceforth the Hindus may be divided broadly into two classes, viz. (1) extreme sectarians who confined their devotion and worship almost exclusively to their sectarian deity like Vishṇu, Śiva, Śakti, etc.; and (2) general followers of the Brāhmaṇical religion, who revered and worshipped all these and other gods, even though they might have been specially attached to one

sectarian deity, and also followed some of the important Vedic rituals and practices. Thus the Smārtas prescribed the regular worship of the five gods Vishṇu, Śiva, Durgā, Sūrya and Gaṇeśa, while the rest of the Hindu pantheon was also freely worshipped by many. The *samuchchaya* doctrine lays down that a Hindu, even when seeking the Brahman, must perform his ordinary duties, and should have a knowledge of the Karma-Mīmāṁsā as well as the Vedānta. The use of the sacred thread, performance of the *gāyatrī* and other rituals by the sectarians may be ascribed to this spirit.

A further step towards the reconciliation of the different sects may be traced in the attempt to establish the identity of Vishṇu and Śiva, such as we find in the *Skanda Upanishad*. The image of Hari-Hara is a visible symbol of this doctrine. There is hardly any doubt that, in spite of the existence of the extreme sectarians who would not tolerate any god other than their own, the general mass of Hindus, even to-day, while professing one sect or other, have a general reverence for all the Hindu gods. The epigraphical records prove that this has been the case throughout the period under review.

Lastly, there was an attempt to prove that the six systems of Hindu philosophy are not really opposed to each other, but they all proclaim the same eternal truth. This view is first met with in *Prabodha-chandrodaya*, an allegorical Sanskrit drama written in the court of the Chandella king Kīrtivarman in the latter half of the eleventh century A.D. In a famous scene in this drama, there is a dispute between the Buddhists, Jainas and followers of other heterodox sects on the one side, and the Vaishṇavas, Śaivas and Sauras, aided by the six schools of philosophy on the other. The basic unity of orthodox Hinduism as against the heterodox sects, which is so vividly brought into prominence in this scene, forms a feature of Hinduism up to the present. Vijñāna-bhikshu, a Sāṁkhya philosopher of the sixteenth century, also proclaims the essential unity of the six systems of philosophy.

IV. HISTORY OF THE DIFFERENT RELIGIOUS SECTS

It now remains for us to trace the fortunes of the two great orthodox theistic systems, Vaishṇavism and Śaivism, together with other minor religious sects from the fourth century A.D. onwards. At the very beginning of the period we notice a systematization of their faiths and beliefs in the Purāṇas. These texts are many in number, and while some like *Vāyu*, *Vishṇu*, *Matsya*, *Bhāgavata* and *Brahmāṇḍa Purāṇas*

are really old, others were added in much later times. These Purāṇas present the two theistic (and also other sectarian) beliefs in a complete form, a form which they have retained till to-day.

A. ŚAIVISM

The Pāśupata sect continued to flourish during this period. Hiuen Tsang and Bāṇabhaṭṭa, both belonging to the seventh century A.D., refer to it as one of the prominent religious sects of the time.

In addition to the Purāṇas such as *Vāyu*, *Liṅga* and *Kūrma Purāṇas*, the Śaiva theism was expounded in the Āgamas. There are twenty-eight of these manuals, each of which has got a number of Upāgamas, the total number of texts reaching up to 198. The Āgamas were composed before the seventh century A.D. and their dualistic teaching formed the foundation of a new Śaiva school which is usually referred to as Āgamic Śaivism. The Advaita philosophy of Śaṅkara gave a new turn to Śaivism. A distinct school flourished in Kashmir, about the middle of the ninth century A.D., mainly under the influence of Śaṅkara's philosophy, and substituted the Advaita philosophy for the dualistic teachings of the Āgamas.

Śaivism flourished in South India and there is an extensive Tamil literature consisting of eleven collections. The author of the first three collections of hymns is the well-known saint Jñānasambandha, who probably flourished in the seventh century A.D. The eleven collections, together with the Tamil Purāṇa called *Periyāpurāṇa*, constitute the sacred literature of the saints and form the foundation of Tamil Śaivism. The first seven collections, known as *Devāram* and composed by the saints Jñānasambandha, his older contemporary Āppār, and Sundara, are regarded as equivalent to the Veda and are sung along with Vedic hymns in certain religious processions. The eighth collection, *Tiruvāchakam* of Mānikkavāchaka, occupies a foremost place in Śaiva literature. This, together with the tenth collection *Tirumantram* of Tirumūlar, reflects the theology of the Āgamas, and both are masterpieces of poetic composition. The patronage of the later Pallava kings (from 6th cent. A.D.) and the mighty Chola emperors (10th cent. A.D.) gave a great impetus to Śaivism in the Draviḍa country.

A further development of Tamil Śaivism took place in the thirteenth and fourteenth centuries A.D., perhaps even a little earlier. This was the rise of Śaiva Siddhānta. The Āgamas were now replaced by the

fourteen Siddhānta-śāstras which laid the foundation of this new system.

An influential and very powerful Śaiva sect, known as Vīra-Śaivas or Liṅgāyatas rose in the Karṇāṭaka and Mārāṭhā countries. The early history of the sect is obscure, but it was most probably founded, or at least brought into prominence by Vāsava, the Brāhmin prime minister of Vijjana who had usurped the Chālukya throne about 1160 A.D. This new sect flourished at the cost of Jainism and Buddhism and was the main cause of their decay in the Deccan and Kanarese districts which constitute now its main stronghold.

The Vīra-Śaivas have several peculiar characteristics. They give great prominence to the monasteries. "In every Liṅgāyat village there is a monastery, and every Liṅgāyat must belong to a monastery and have a *guru*; he need not visit a temple at all." "The members of the sect worship Śiva in his phallic form, reject the authority of the Vedas, disbelieve in the doctrine of rebirth, object to child-marriage, approve of the remarriage of widows and cherish an intense aversion to the Brāhmaṇas."

B. THE SAKTAS

The cult of Śakti, wife of Śiva, attained a great predominance during this period. It is based upon the Sāṁkhya philosophy according to which Spirit or Purusha (here identified with Śiva) is inactive, while Prakṛiti, (identified with Śakti), is productive and the universal material cause. Hence Śakti is superior to Śiva.

The system lays stress on the instinctive power of sounds and the presence, in the human body, of a large number of minute channels or threads of occult force, called *nāḍi*, and six great centres of occult force (*chakra*) described as so many lotuses, one above the other. Hence arise the supernatural powers of *mantras* or mystic syllables such as *hrīṁ, huṁ, phaṭ*, etc., and the working of miracles by mystic forms of *yoga*. Besides, the Śāktas also believe in the magic power of diagrams (*yantra*) and ritualistic gestures made with fingers (*mudrā*).

The worship of the goddess Śakti was accompanied with sacrifices of animals and human beings. But the most characteristic feature of the cult was the *chakra-pūjā*, *i.e.* circle worship in which an equal number of men and women sit round a circle and, uttering mystic *mantras*, partake of the *pañchatattva* consisting of five elements, viz. wine, meat, fish, parched grain and sex. Many sorcerous practices

formed a part of the cult, and a picture of this is given in the Sanskrit drama *Mālati-Mādhava*. Detailed instructions of these practices are given in the texts known as Tantras. Hence Tāntrikism is used as a general name for similar rituals which are found in many religious sects. The Śaiva Kāpālikas and Kālamukhas, for example, followed similar rituals and practices, and they are found associated with the worship of many other goddesses.

Taken at its best, the Tāntrika doctrine, both in Brāhmaṇical religions and Buddhism, is a degraded form of Yoga. By worshipping Śakti, Prajñā (Mahāyānist goddess) or other goddesses, in the manner indicated above, it seeks to attain, in a supernatural manner, and in an incredibly short time, objects of either material nature (wealth, longevity, invulnerability, etc.), or spiritual character (power of evoking Buddha or union with some divinity even in this life).

Some Tantras, however, indulge in theories and practices which are revolting and horrible.

C. VAISHNAVISM

We have noted above the three basic elements of Vaishṇavism, viz. the original Bhāgavata doctrine, the Pāñcharātra system, and the Gopāla (cowherd) Kṛishṇa, culminating in the Rādhā-Kṛishṇa cult. During the period under review the Pāñcharātra first comes into prominent notice and is later superseded by the third element.

But the Pāñcharātra system shows from the beginning the influence of the third element. The *Vishṇu Purāṇa*, which is an important text of the system, contains the detailed story of cowherd Kṛishṇa and his youthful sports. The most important development of the system is the growth of *Pāñcharātra Saṁhitās* which give a complete exposition of the faiths, beliefs and practices of the Vaishṇavas. The traditional number of these Saṁhitās is 108, but nearly double that number of texts are named. Their date is uncertain, but may be placed between A.D. 600 and 800. They show a considerable influence of the Tāntrika element and lay stress on the Śakti of Vishṇu. Otherwise, they show a normal development of the teaching formulated in the Nārāyaṇīya section of the *Mahābhārata*, noted above.

The *Bhāgavata Purāṇa* heralds a new departure. It concentrates its attention almost solely on the cowherd-life of Kṛishṇa and dwells specially on his amorous sports with Gopis. These love-sports are described in all their details, while in the later life of Kṛishṇa which we

find in the *Harivaṁśa* and *Vishṇu Purāṇa* they are hardly noticed at all. But the most distinguishing feature of the *Bhāgavata Purāṇa* is the exalted tone of *bhakti* or devotion which is displayed throughout the work. The fervent emotionalism which characterizes mediæval Vaishṇavism has its origin in this really great work.

The date of the *Bhāgavata Purāṇa* is uncertain, but it is generally regarded as a late work. The various dates suggested vary from the seventh to the ninth century A.D. It must be noted, however, that even the *Bhāgavata Purāṇa* does not mention Rādhā, though it undoubtedly contained elements which might easily give rise to this cult. For, among the Gopīs there was one who was the special favourite of Kṛishṇa. But it is difficult to say when this Rādhā cult actually came into being. It was a well-known thing in Bengal by the time of Jayadeva, the Bengali poet, who composed his immortal *Gīta-Govinda* in the court of Lakshmaṇa Sena during the last quarter of the twelfth century A.D. Rādhā is mentioned in the *Gopāla-tāpanī Upanishad* and *Brahma-vaivarata Purāṇa*. But the dates of these works are not known and they may not be earlier than the eleventh century A.D. A ruined temple, recently discovered at Paharpur in Bengal, contains sculptured representations of Kṛishṇa's life, and in one of these, Kṛishṇa is accompanied by a female. This has been taken to be a representation of Kṛishṇa and Rādhā, but there is no positive evidence in support of it. The date of the temples is also uncertain, but it may belong to the sixth or seventh century A.D.

It is generally believed that the *Bhāgavata Purāṇa* was written in South India. Whether this is true or not, there is no doubt that the pure devotional element of Vaishṇavism flourished in the Tamil country. The most remarkable specimen of this is contained in the songs of the famous Ālvārs. Their number is usually reckoned as twelve, and although their dates are uncertain, they may be all placed between the fifth and twelfth centuries A.D. Their devotional songs, called *Prabandhas*, written mostly in Tamil, are known as the Vaishṇava Veda, and their images are worshipped along with those of Vishṇu.

The next great landmark in the history of Tamil Vaishṇavism is the rise of a school of philosophers known as *āchāryas*. Nāthamuni, the first of these, flourished about the end of the tenth or the beginning of the eleventh century A.D. He organized the Śrī-Vaishṇavas, and popularized the cult to the masses by collecting the songs of Ālvārs, setting them to Dravidian music, and having them regularly sung in the

temples. But he was also a great theologian and his school took up the task of giving a philosophical background to the Vaishṇava theories and creeds. Nāthamuni was followed by three *āchāryas*, the last of whom, his grandson Yāmunāchārya, was a great scholar.

Yāmunāchārya was succeeded by the famous Rāmānuja (11th cent. A.D.). His great task was to put the religion on a secure philosophical basis. The great Śaṅkarāchārya's doctrine of monism (*Advaitavāda*) was a direct challenge to the cult of *bhakti*. If there is only one Absolute Spirit, and all else is unreal, there is no scope for devotion of the supreme God by the individual, for the two are really one and the same. Rāmānuja set up against it a full and critical exposition of the *Viśishṭādvaitavāda* or qualified monism first propounded by Yāmunāchārya. It was based upon the Upanishads and the *Brahmasūtras* and construed the individual soul as an attribute of the supreme Soul but distinct from it. The latter dwells in the individual heart and can therefore be an object of devotion. Rāmānuja follows closely the tenets of the *Bhagavad-Gītā* in describing the mode of salvation, but his *bhakti* is not so much an unbounded love as a continuous meditation or *upāsanā* prescribed in the Upanishads. Both in his philosophy and general practices, Rāmānuja follows the orthodox Brāhmaṇism. But his sect, known as Śrī-Vaishṇavas or Śrī-Sampradāya, has nothing to do with Gopāla-Kṛishṇa, *i.e.* Kṛishṇa as a cowherd boy. On the other hand he recognizes Śrī (Lakshmī), Bhū (earth) and Līlā (sport) as the consorts of Vishṇu.

The philosophy of Rāmānuja was further developed by Madhva or Ānandatīrtha (13th cent. A.D.), the founder of another sect. He conceived God as altogether distinct from the individual spirit. He travelled all over India, fighting the philosophical doctrines of Śaṅkara and establishing the Vaishṇava creed on a definite philosophical basis.

Rāmānuja lived his early life in Kāñchī, while Madhva's activities were chiefly confined to the western or Malabar coast. But in his old age Rāmānuja was forced by the persecution of the Śaiva Chola king to take shelter with the Hoysalā king Vishṇuvardhana of Dorasamudra (Mysore). The latter adopted Vaishṇavism and his patronage counted a great deal for the success of the faith.

Rāmānuja followed more or less Vāsudevism of the old Pāñcharātra system, recognizing Vāsudeva with his four *vyūhas*, and his identity with Vishṇu and Nārāyaṇa. But Madhva ignored Vāsudeva and his

vyūhas and referred to the Supreme Spirit mostly as Vishṇu. Thus a general Vaishṇavism took the place of the old Bhāgavata school.

The southern Vaishṇavism laid little stress on the cowherd element of Kṛishṇa and altogether ignored Rādhā. Far different, however, was the case with Vaishṇavism in Northern India, which was first put on a philosophical basis by Nimbārka who flourished after Rāmānuja, probably in the twelfth century A.D. His philosophy is a compromise between those of Rāmānuja and Madhva, as he believes God to be both identical and distinct from the individual spirit. But his chief difference from his predecessor Rāmānuja lies in substituting the old and pure *bhakti* (devotion) for *upāsanā* (meditation), and giving prominence to the elements of Kṛishna and Rādhā. Born in the family of a Tailaṅga Brāhmaṇa in the South (perhaps Bellary district), Nimbārka lived in Vṛindāvan (near Mathurā) and his sect, known as Sanaka-sampradāya, flourishes in Northern India.

Among other sects stressing the worship of Rādhā may be mentioned the followers of Vishṇusvāmī, about whom, however, very little is known. He closely follows the system of Madhva, but introduces the Rādhā element. He may have preceded Nimbārka.

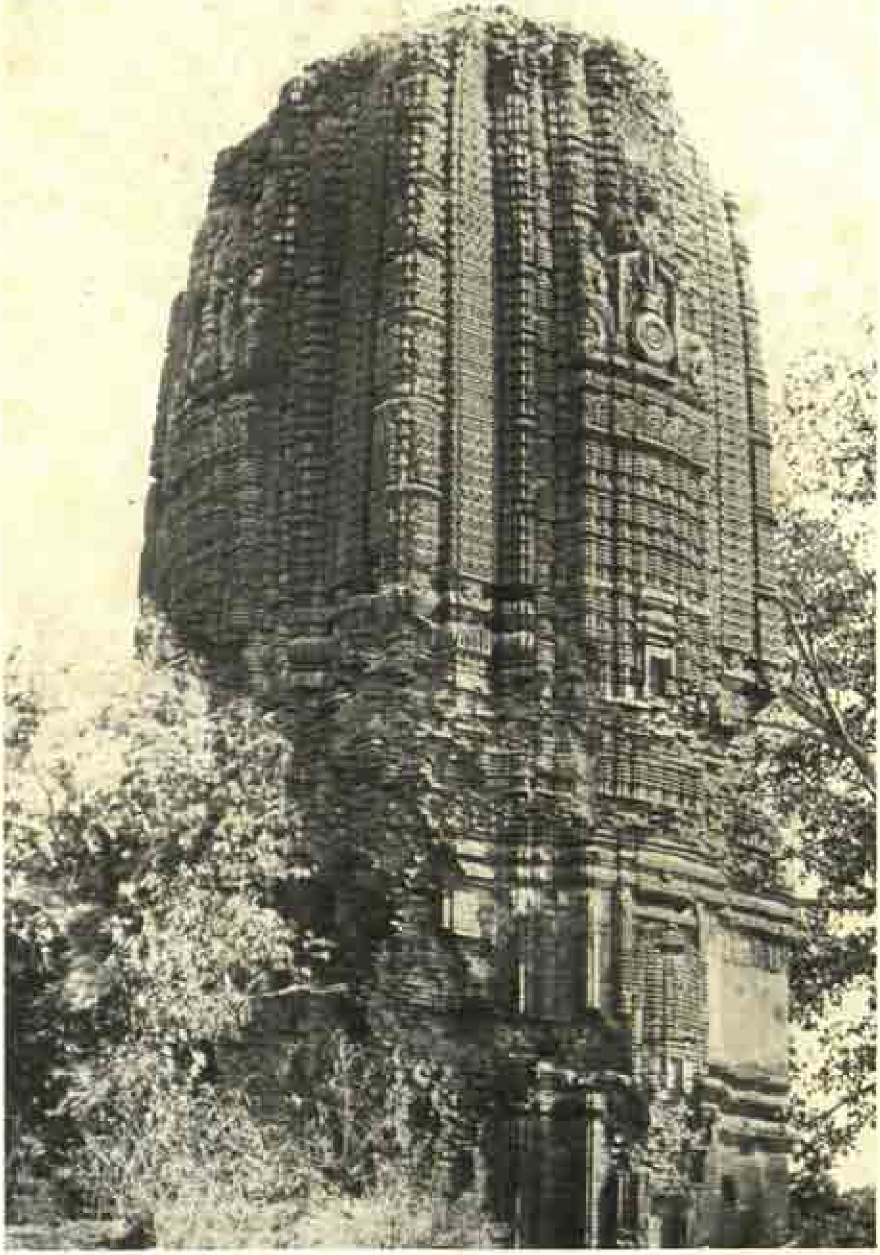
According to Nimbārka Rādhā was the eternal consort of Vishṇu, was incarnated like him in Vṛindāvan, and became the wife of her lord. A further progress of the Rādhā cult is found in Jayadeva's *Gīta-Govinda* where Rādhā is the mistress and not the wife of Kṛishṇa.

It may be noted that Nimbārka only worshipped Kṛishṇa and his consort to the exclusion of other gods. He thus discarded the *samuchchaya* doctrine followed by the Śrī-Vaishṇavas, Mādhvas, Vishṇu-svāmīs, and generally by all the Bhāgavatas, and became a purely sectarian Vaishṇava.

D. MINOR RELIGIOUS SECTS

In addition to the main sects hitherto described there were during the period under review minor sects worshipping various other deities. Most of these are associated with either Śiva or Vishṇu. Thus Durgā, Gaṇapati and Skanda (Kārtika), the consort and sons of Śiva, were regularly worshipped and had an organized following and a sectarian literature. Similarly there were sects worshipping the Narasiṁha and Rāma incarnations of Vishṇu.

The worship of Dharma was very much prevalent in Bengal and had an important literature. It is traced to a Buddhist origin, the second



SIDDHESVARA (SIVA) TEMPLE, BANKURA (BENGAL)

Copyright: Archæological Survey of India



SŪRYA, THE SUN-GOD
Pāla School, Bengal

Courtesy: Mr. O. C. Gangoly

member of the Buddhist Triratna (Buddha, Dharma and Saṅgha) being converted to a Hindu god.

Far greater importance attaches to the sects connected with the worship of Brahmā and Sūrya. Brahmā, though less important than Vishṇu or Śiva, was the god of a sect which is referred to in the *Mārkaṇḍeya Purāṇa* and the *Padma Purāṇa*. There is a famous temple of Brahmā in Pushkara, near Ajmere.

Of the vast Vedic pantheon, Sūrya alone formed the god of a particular sect, and many temples were erected for his worship. This seems to be due to three reasons. In the first place the *gāyatri-mantra*, daily repeated by the Brāhmins, kept alive the memory of the sun-god. Secondly, the orb of the sun being daily visible, the idea of his worship could not be dropped altogether. Further, the Magis of Persia brought a cult of the sun into India about the third century of the Christian era. The two streams mingled and saved the sun-god from the fate of the other Vedic deities. Many inscriptions dating from the Gupta period refer to the worship of the sun-god and big temples were erected in his honour.

V. MEDIAEVAL BHAKTI CULT (Muslim Period)

The most outstanding feature of the religious development after the Muslim conquest of India was the further progress of the cult of Kṛishṇa and Rādhā, leading, on one side, to gross practices of the Tāntrika type, and, on the other, to a high and sublime form of *bhakti* or emotionalism.

The cult was carried to its extreme form by a Tailaṅga Brāhmin named Vallabha whose activity falls in the first half of the sixteenth century A.D. His Vaishṇavism centres round Kṛishṇa, the beloved of the Gopīs, and his eternal consort Rādhā. Elaborate rituals for the worship of Kṛishṇa and religious feasts and festivals were fully developed—all marked by a spirit of sportive enjoyment. This, coupled with a lamentable lack of spiritual fervour and high tone of morality in the sect, seems to be the secret of its great hold on the masses whose ordinary inclinations find in it a comfortable religious sanction. One of the distinguishing characteristics of this sect is the exalted position of the *guru*, or the spiritual guide, called the *mahārāja*. God can only be worshipped in the house or temple of the *guru*, to whom the devotees are enjoined to surrender all their belongings. The highest spiritual object is to join in the eternal sports of Kṛishṇa and Rādhā. The worldly life offers no bar to this salvation. True to this doctrine, the *gurus*

were married men and led worldly lives. It is no wonder that, in its degraded form, this sect descended into a vulgar and disreputable body with loathsome practices, and made Vaishṇavism a byword of reproach. The doctrine flourished mostly among the mercantile communities of Gujarat and Rajputana, though its baneful effects spread far beyond these limits.

Bengal was saved from this degraded form of Vaishṇavism by the famous Chaitanya or Śrī-Gaurāṅga (1485-1533 A.D.), a contemporary of Vallabha. The elements of Rādhā and Kṛishṇa had taken deep root in its soil, as the songs of Jayadeva (12th cent. A.D.) clearly show. But the merit of Chaitanya lies in the fact that he elevated the passions of the couple to a high spiritual plane and stressed the emotional at the cost of the ceremonial side of religion. His piety, devotion and fervour introduced a pure and spiritual element in Vaishṇavism which offers a bright and refreshing contrast to that promulgated by Vallabha. But the attractions of the latter proved too strong to allow the spiritual appeal of Chaitanya to form a permanent basis of popular Vaishṇavism in Bengal. With the lapse of time Rādhā has gained more and more prominence and many degrading elements have crept into Bengal Vaishṇavism. The extreme forms are represented by the sects known as *Kartābhajās* (worshippers of *kartā* or *guru*) and the *Sakhībhāvas*. The ideal of the male members of the latter is to obtain the womanhood of Rādhā even in the physical sense.

The history of religions teaches us an important lesson. It is that any exaggerated importance attached to the female element in religion, or the association of religion with amorous intrigues, even though inspired or prompted by the highest spiritual motive and backed by metaphysical interpretations, is sure to lead to the degradation of its followers. This is best illustrated by the fate of the Śākta and Rādhā-Kṛishṇa cults.

It is refreshing, therefore, to turn to some sects of Vaishṇavism which realized this truth and gave a new tone to the religion by avoiding the fatal process. This was done by a twofold means. In the Mahārāshtra country Rādhā was replaced by Rukmiṇī, the lawful wife of Kṛishṇa, who plays all along a subordinate rôle to her husband. The great preachers of this sect were Nāmdev (end of the 14th century A.D.) and Tukārām (17th cent.), the founders of the popular form of Vaishṇavism in Mārāṭhā country. Another mode, propounded by Rāmānanda (14th cent.) was to replace Kṛishṇa and Rādhā by Rāma and Sītā. This was further developed by his famous disciples, the chief among whom

were Kavīr (15th cent. A.D.), Tulsīdās (1532-1623 A.D.), Mulukdās (*c.* 1600 A.D.), Dādū (*c.* 1600 A.D.) and Rohidās.

The religion propounded by them was more chaste and pure. The simple, beautiful verses of Nāmdev, Tukārām, and the disciples of Rāmānanda are full of piety and devotion and they have acquired wide celebrity far beyond sectarian limits.

In addition to the purification of the *bhakti* cult and its elevation to a high spiritual level based on secure foundations of morality, these Vaishṇava teachers together with Chaitanya have made other notable contributions to the culture of the mediæval age. These may be summed up as (1) preaching in vernacular which thereby got a great impetus; (2) ignoring the caste distinctions and admitting even the lowest castes to their fold; and (3) definitely rejecting rites and ceremonials as useless and laying stress on the morality and purity of the heart. Excepting Rāmānanda and Chaitanya, the others carried this last feature to an extreme form by discarding altogether the worship of images.

These characteristics need not be treated in detail. The debt which Bengali, Hindī and Mārāṭhī literatures owe to these Vaishṇava preachers is too well-known. As to the second, it is interesting to recall that, of the chief disciples of Rāmānanda who founded different schools, Kavīr is said to have been a Muhammadan weaver, Dādū was a cotton-cleaner and Rohidās was a leather-worker. People of all classes and castes, including Muhammadans, were taken into these sects, and thus began that levelling process the completion of which is still the aim and, alas, the despair of modern reformers.

It will thus be seen that the socio-religious revolution sketched above followed closely the lines which marked that of the fifth century B.C. and culminated in Buddhism. The only difference is that emotionalism replaced rationalism and a pious devotion to God took the place of the austere morality of the agnostic Buddhists.

In a similar way, we may notice the revival of the pure monotheistic doctrine of the Upanishads in the Sikh religion founded by Nānak (1469-1539 A.D.). He invoked the one true God, without any name, and without the intermediary of any prophet or incarnation. " Numerous Mahomets have there been," says he, " and multitudes of Brahmās, Vishṇus and Śivas, but the chief of Lords is the one Lord, the true Name of God." He discarded the Vedas, Kṛishṇa, saints and pilgrimages, and put faith in one self-existent Creator and Destroyer who cannot be conceived in another form and whose true nature cannot be expressed

in words. So far it has a wonderful agreement with the Upanishadic doctrine. But then Nānak denied that God can be comprehended by knowledge or wisdom, and instead of meditation he relied on faith and grace. Here we find the influence of the *bhakti* cult which moulded all religious thoughts of the age. Although Nānak deliberately placed himself outside the pale of Hinduism, his doctrine, like that of Rāmānanda and Chaitanya, may be looked upon as an attempt to purify the *bhakti* cult on a line different from, but equally rooted in, the Hindu religion and philosophy of the past. Like them he did away with caste distinctions and ceremonials, and preached in vernacular. He also decried the worship of images. He was a more courageous reformer and went much further than the other two. The result was that his doctrines had never any great effect upon the masses and was confined to the province of the Punjab where he lived and preached.

Although, as I have just said above, there is nothing new in the special characteristic features of these religions, including even the exclusion of the worship of images, and all of them may be traced to ancient Indian religious systems, still it is possible that the religion of Islam served as a potent factor in leading to these developments. Ever since the eleventh century A.D. Islam had been gradually penetrating into India, and the political domination of Muhammadan dynasties since the thirteenth century A.D. led to a rapid increase of its adherents in Northern India. The close and intimate contact between Hinduism and Islam could not but affect both the religions, and it is not perhaps a mere accident that from the fourteenth century A.D. the two characteristic features of Islam, the equality of man and hatred of the worship of images, began to influence the Vaishṇava reformers. A more direct and thorough influence of Islam may be traced in the severe monotheistic doctrines of Nānak. It is also to be noted that these principles are almost absent in South India, precisely that part of the country where the influence of Islam was the least. We cannot thus altogether ignore the influence of Islam in shaping the religious doctrines of Northern India and Mahārāshṭra from the fourteenth century down to the end of the seventeenth.

VI. MODERN AGE (1800-1900 A.D.)

The eighteenth century is similarly marked by the impact with Western thought which led to the religious reforms of the nineteenth century. It brought back the rationalism of the fifth century B.C. and

led to the foundation of the Brāhma Samāj (including Prārthanā Samāj), the Ārya Samāj and the Theosophical Society. Towards the close of the century flourished Ramakrishna Paramahamsa who sought to reconcile this rationalist doctrine with the emotionalism and ritualistic orthodoxy of the earlier ages on the basis of experience gained through spiritual culture. His disciple Swami Vivekananda gave a definite shape to his catholic views, and broadbased the doctrine on the Vedānta philosophy. He formulated the teachings of his Master as a definite creed and founded the great Ramkrishna Mission which is now a potent force not only in India, but far beyond its boundaries. It is powerfully moulding the Hinduism of the present day, and giving it a wide catholic character. But its sphere of activity far transcends the narrow circle of Hinduism. By carrying to its logical conclusion the Vedāntic doctrine of the identity of man with God, it has established the fundamental equality of man on a secure basis. Coupled with its other doctrine, that all religions, if truly followed, are but different ways to salvation, and there is no inherent conflict between one religion and another, it has offered a solution of the most complicated problem of the day. To a historian, its significance lies in the wonderful synthesis of the varied cultures of India—the philosophy of the Upanishads and Śaṇkara is combined with the theistic beliefs, and the pursuit of the highest knowledge of abstract principles is accompanied by meditation and devotion. The rituals of the Purāṇic religion are performed with meticulous care, but it knows no distinction of caste and creed and equally honours not only Buddha and Chaitanya but Christ, Muhammad, Zoroaster and other founders of great religious systems of the world. A great future lies before it, but it is as yet too early to foresee or forecast its ultimate destiny.

PROTO-INDIAN CULTURE

The valleys of the Indus and the Ganges have a claim to immortality. Their charms strike the eye in a series of surprises. Meandering rivers make wide and lovely detours. Here were the abodes of ancient peace and the haunts of Vedic singers. In the paradise of swelling waves and overhanging woods were intervals of sylvan islets and bowery hollows. Once upon a time towers were bosomed high in the lofty trees. At Mohenjo-daro the mounds soar 70 ft. above the plain, over an area of 240 acres. About 80 miles south lies Amri, where there are deeper strata awaiting the spade and shovel, and 400 miles north-east is Harappa in the Punjab, where mounds rising to 65 ft. were first noticed in 1920. The culture was traced as far as Rupar in the Ambala district by 1932. Southward it has been pursued as far down as Limbdi in Kathiawaḍ. It is known to have extended over the whole of the explored region of western Hindustan, from the submontane region of the Himalayas in the north to the river Narmada in the south. Just at the moment of writing (August, 1935), there appears good prospect of tracing this culture to its beginning in neolithic times.

Notices of some details appeared in the annual Reports of the Archæological Survey from 1920-21 onwards to 1927-28. The ruins of Harappa and Mohenjo-daro were visited and studied by the present writer during November, 1928, and critical estimates published by him in the *Aryan Path* (January, 1930), and the *Half-yearly Journal of the Mysore University* (Vol. III, No. 2). Those of Mohenjo-daro were published in detail by Sir John Marshall in 1931 (3 Vols. Probsthain, London). The only additions to the subject-matter since have been the *Archæological Report* for 1928-29 (published in 1933) and the *Memoir on Sindh* (published, 1933). The finds are of considerable interest to students of Indian sociology and religion.

1. BUILDINGS

The large edifice at Harappa contains two rows of halls built on the same plan, with floors well laid. The general foundation wall is 162 ft., and each of the halls is 57 ft. long. The larger halls are 17 ft. wide, and the smaller ones alternating with them, 3½ ft. There are steps leading to one of the larger halls from below, and on the sides of the

halls are rooms or houses. The smaller halls are enclosed by buttresses, the entrance being only by a slit on one side. The walls are of kiln-burnt clay, and the stouter ones are 9 ft. at the base. Two brick-kilns have been unearthed, and numerous articles of earthenware. Wedge-shaped bricks are used round wells, and they resemble the aureole round the figures of the sun on the pots. There are bath-rooms and an elaborate system of drainage. One huge drain at Mohenjo-daro is 6 ft. high inside and is covered by projecting bricks from the sides, built in the fashion of an alcove. The bricks found in the latest levels are similar to those unearthed at Ur by Mr. Woolley. Economy is effected by the use of sun-dried bricks, which are in use in Sindh even to-day, mitigating the heat of the sun. As the explorations go deeper down, the masonry is seen to deteriorate, and the houses decrease in size.

Vedic evidence indicates that the cities of the Āryas were of brick (*ishṭaka*), while those of the Asuras were of stone (*aśmamayi*).[1] The Āryas lived on the banks of rivers and hence the preference for burnt brick. Stone buildings were out of the question, as settlements were frequently changed and the country was vast and alluvial (contrast the conditions of Egypt and South India). One of the texts of the *Yajur-Veda*[2] even refers to the dismantling of a brick hall of the Āryas by their enemies. There is evidence of a similar brick-work and of an alcove in brick-work or " crenellation " both in Mesopotamia and in Egypt. But the bricks of the Indus Valley are straight-sided (as in Egypt), while the Sumerians used plano-convex bricks about 3,000 B.C. Recent excavations at Erech, Ur and Kish have, however, disclosed much earlier strata there, when the buildings were of small rectangular bricks, not of unhandy plano-convex ones. The bricks show no traces of straw or other binding material. The underground cellars resemble those of Mesopotamia, which afforded retreat in the summer months. But there are no baths in Mesopotamia. From ceramic evidence, the sun-dried bricks are believed to be earlier than the Nal burials, and therefore pre-Sumerian in date. L-shaped bricks are used to cover up corners, and only one such is found at Susa, evidently an importation from the Indus Valley. The thick walls and the use of sun-burnt bricks for the foundation and sides in walls appear to me to be clear evidence of the anxiety for protection against percolation and inundation. This is also evidenced by the fact that the thresholds of houses are considerably higher than

[1] *Ṛig-Veda* IV. 30-20.

[2] *Taittirīya Brāhmaṇa* III.

the street level. Dangers from floods are known in the earliest books of the *Ṛig-Veda*, and one hymn of the seventh book[1] records that the floods on the Rāvi abated in response to the prayers of sage Vasishṭha.

Village life is evidenced by courtyards in front of houses, the lanes between streets, brick-kilns and potters' shops. Some of the narrow outer verandahs would seem to indicate that the Indian doors opened on the inside and not on the verandah as in Sumeria. Very few door-sockets have been found. We never find the shallow reveal in the side of a wall for a door to abut against, which is a very common feature in Sumeria. There is no evidence yet of city walls, as there undoubtedly is in Sumerian Kish. The plain severe facades and long bare walls are unlike the panelled walls of Mesopotamia. The sides of buildings face the cardinal points (cp. Egypt), whereas it is the corners that do so in Babylonia.

Some of these elaborate edifices may really be temples. Hindu superstructures were of wood, and perished altogether. Marshall thinks that the unusually massive foundations of structure XXX, nearly 10 ft. deep with a solid infilling of crude brick, presupposes a high superstructure, perhaps a corbelled *śikhara* over the central apartment. There are small quarters ranged symmetrically in a double row alongside it. Similarly the pillared hall in C4 or L area has its roof supported on 20 brick piers, disposed in four rows of five each. The floor was later divided up by a number of narrow corridors or gangways most of which lie parallel north to south. The chief seat was in the middle of the south side of the hall. As the idol is placed facing the east, the benches and corridors were apt accommodation for the audience at public worship. But no trace of any image or image-base has come to us. We may assume that the idols were also fashioned of wood or other perishable material, as *takshans* and *rathakāras*, experts in woodwork, were, alone of craftsmen, accorded places in the King's Cabinet in ancient India.[2]

That the cult statues stood in chapels of some sort is vaguely suggested by certain seals, on which a statue is depicted framed, as it were, in a doorway made of the *aśvattha* tree. Square niches in the walls of two rooms in Mohenjo-daro give this portion the look of a temple. The large halls of Harappa cannot be explained otherwise than as halls of sacrifice or of congregational worship. The large size of the

[1] *Ṛig-Veda* VII. 83.

[2] See my *Indian Culture*, Vol. II. p. 23.



MOHENJO-DARO

A General View of Excavation



THE GREAT BATH AT MOHENJO-DARO

Copyright: Archæological Survey of India

halls and the rooms seems to rule out the assumption that these may be mere rooms of worship in private houses as in ancient Crete, or small shrines as at Ur. We have an analogue rather at Kish, where there are temples and temple-towers built of early plano-convex bricks, a large open court for worshippers well provided with water, and a special shrine at the end of the court. Congregational worship is indicated by the joint family system of the time with its partitions evidenced by party walls between houses and new walls by their side. Evidence of rounded street-corners possibly points out to processions along the streets.

II. HUMAN FIGURES AND FIGURINES

The men have their hands about their knees, in figurines of both Harappa and Mohenjo-daro, and some of them have the *nāga* hood. The Nāgas were serpent-worshippers, and they figure in a semi-mythical way in early epic traditions. We find them mentioned as people connected with the Narmada, and their women married by epic heroes like Arjuna in the *Mahābhārata*, and Kuśa, son of Śrī Rāma. Their habitat is one of the seven regions of Purāṇic geography, and they had dispersed along the coastal regions of the Indian ocean, and crossed over to Ceylon. They have left memorials in place names—Nagercoil in the west, Negapatam on the east coast—and are mentioned in the Ceylonese *Mahāvaṁśa* and in the earliest South Indian literature and traditions. One of the figures on the seals is cross-legged in meditation, and has been rightly interpreted as an Indian god in pose. The *nijānuka* posture of the men (hands about the knee-caps) is described in one of the later Vedic texts.[1] This may be contrasted with the Sumerian posture of the hands folded at the waist. The curious half-kneeling position with the right knee raised is that exactly used by the Hindus to this day at the rites to the manes. The hands rest on the knees, between which a fold of a skirt-like garment is stretched (plate 99, figures 4 to 6).

Another feature of interest is the drapery in the *upavīta mode.*[2] That this was the prevailing mode is proved by figures 1 to 3 in plate 100, where the left arm and hand are shapeless, being hidden beneath the shawl; but the right ones are bare, as the shawl passes underneath. This mode of wearing the robe was initiated in India in the later Vedic age. Plate 98, figure 1 shows the Indian *tilaka* (mark) at the centre of the forehead, as well as the *upavīta* (holy thread). Plate 105, figures 22 and

[1] *Taittirīya Araṇyaka* I. 6.

[2] *Ibid* II. 2.

25 show the arrangement of the hair in three coils, as described in Vedic ritualism (*trikaparda*). A long coil is wound round and round on the top of the head; and there are two coils, one on either side. There is a similar figure dug up at Harappa, showing that this is characteristic.

One of the female figures is suckling her babe, another clasping something to her breast with the left hand, and a third is apparently a goddess fighting with a lion or a tiger. There are some similar figures on Assyrian seals. Indian legend describes the fight of the goddess Durgā with a demon having the form of a wild buffalo (*mahisha*). The Indian female figures have their upper arms covered with armlets right up to the shoulder, as is even now the fashion with newly wedded women of Sindh and Rajputana. The women are semi-nude. Figures of nude women were unknown in Babylonia before the end of the third millennium B.C.

Mr. Mackay draws attention to the fact that the human statuary does not resemble that of any other country. The eyes are long and narrow, not round and full, as in all Sumerian statuary. The neck is thick, short and sturdy. The forehead, low and receding, does not indicate lack of intellect or brain-power. There is no prognathism, no oblique (Mongol) eye. The ridge of the nose is in a line with the forehead, as in Greek statuary (unlike Sumerian). The ear is poorly represented, unlike in early Egypt or Sumeria. The arm is too thin, the thumb projects from the wrist (not hand) and is as long as the fingers. We find no clean-shaven figure, or any with the upper lip shaven as in Sumeria. A closely cropped, and sometimes curly, beard is conspicuous by the absence of the moustache. The hair is knotted, or partly hangs down.

The trefoils and circles on the *dhoti* look prominent and were sewn, not woven. The kilt resembles the modern *dhoti*. Fillets as in pre-Sargonic graves are of gold or silver or woven material. In Babylonia a garment was frequently worn from the waist (*kaunaki*), and also a shawl under the right and over the left shoulder. Fillets to keep the coiled-up hair in place were worn in Sumeria until a millennium later than at Mohenjo-daro. Traces of a thick paste of red paint are found in the trefoils.

Attention may be drawn to some of the figures illustrated in Volume III. Plate 104, figure 14 shows five rows of necklaces hanging down to the level of the loin-band, and a girdle of three bands decorated with medallions in front. The attenuated waist and the exaggerated hips

are truly Indian. The buttocks are not unduly pronounced as in other countries (e.g. Egypt, see *Jour. Eg. Arch.* for 1929, pl. IX, fig. 2). Plate 105, figure 20 clasps a suckling babe with both arms, and was discovered 8 ft. below the surface. Sir Aurel Stein picked up quite a similar figure at Mehi. These have to be contrasted with plate 105, figure 29, for instance, which proves its outlandish character by the exaggeration of the buttocks, not the thighs, and by its being singularly free from ornament.

In the museum at Mohenjo-daro the skeletons are dolichocephalic, but the skull from the fractional burial and the marble and alabaster statues show a pronounced brachycephaly. In one stratum—the B.J. site—a skull is clearly prognathous, the chin being prominent and sharp-angled. But these skulls are of uncertain dates. As Mr. Hargreaves observes, "The certainty that these 14 skeletons are of a date subsequent to the decay of the building in which they were recovered, assigns them to a period posterior to the abandonment of the later city." "Of the skeletal remains found in area HR only two can with certainty be assumed to be true burials, viz. Nos. 1 and 3, and of these the former has no connection with the Indus civilization, and the latter is seemingly of a date subsequent to the abandonment of the courtyard in which it was found." Of the 100 fractional burials at Harappa only one is contemporary with those of Mohenjo-daro and is assignable to the later period III. It is later than the proto-historic period of our finds.

All the methods of disposal of the dead found in the relics, with one or two others, are found described in the Vedic texts,[1] and in later non-Aryan traditions.[2] From ancient South Indian sites were unearthed long ago numerous urns like those of Harappa, in which skeletons were doubled up inside, their foreheads being bound with fillets of gold as at Mohenjo-daro, and with bronze figures of the dog and the buffalo near them. These clearly non-Aryan urns are now in the Madras museum. The Dravido-Babylonian system of preserving dead bodies is mentioned in the *Rāmāyaṇa*, where some people are spoken of as *mṛitapāh*, and in the ancient Tamil works, the *Purananuru* and the *Manimekhalai*.

III. IMPLEMENTS AND ORNAMENTS

These are of gold, silver, copper, lead and bronze. Bronze implements, discovered in plenty, dismiss the mistaken notion of India

[1] *Rig-Veda* X. 14. 7; *Atharva-Veda* XVIII. 2. 34.

[2] Cf. *Manimekhalai*, Ch. VI.

having had only a copper and not a bronze age. Shell bangles, copper rings and bracelets were found on the skeletons. The bangles are hollow and filled with shellac or joined with wax. On some of them are two pin-holes at each side of the joint. These bracelets are unlike those of Syria and South Russia, which are penannular. Dr. Hornell identified cups and bangles of India among the ruins of Susa and Lagash. Connection with Minoan culture appears to be indicated by the incised marks and symbols on the prehistoric pottery unearthed at Hyderabad. Indian connection with Babylonia must have been by sea as well as by land. We have no Iranian modification (substitution of *h* for *s*, for instance) in the names for axe and muslin, of the Aryan gods figuring in the Boghaz-keui inscriptions, or of the people named in the Tel-al-Amarna letters. The ethno-lingual island of the Brahuis of Baluchistan also suggests connection by the sea. The knitting needles are cylindrical, long and sharp-pointed, with eyes for the thread. Spinning and needle-work are well-known Vedic occupations. Stone knives and crude scrapers were found along with jewels in polished gold, fine paste and glazed faience, white and blue, whereas the blue colour did not find favour with the Sumerians.

The Copper and Bronze Age to which these finds belong is Aryan rather than Dravidian. The Copper Age in Egypt is that of the second city of Susa, contemporary with late pre-dynastic times and wih the earliest Sumerians of history. All the small copper implements of the age are shaped on prototypes of bone and stone. The type of axe is certainly of Asiatic origin.[1] Its name *pilakku* (Vedic *paraśu*) shows its Indian origin. The axes of the first city of Susa are independent of stone prototypes, and are borrowals. Real bronze was unknown in Mesopotamia; what was called bronze there was an alloy of lead, antimony and copper. The non-Aryan love of ornament is entirely absent, and there are no traces of decoration in the buildings. The designs on the painted pottery are primitive and commonplace. The few human images in the round are archaic and primitive. No copper implements unaccompanied by iron ones have yet been discovered in South India. The Vedic word for copper is *loha*, the Sumerian *urud* and the Armenian *aroir* (cf. alloy). It is generally accepted among scholars that the Egyptians got their knowledge of copper-working from the East.

[1] Frankfort: *Studies in Pre-historic Pottery*, part I, p. 117.

IV. SEALS

Engraved seals were found in the rooms, and everywhere in the halls. They are of varied materials. A few are of pottery, some of steatite, and most of fine paste known as faience. Some of the earliest date, discovered since 1927, are evidently compartments for holding amulets which were folded small. No true sealing has been found here, but the clay sealing of Yokha in Babylonia bears the humped bull and pictographs identical with ours, and at its back is some woven material. It probably represents a bale from India. Our seals which are rectangular in form have analogues in the new finds at Kish, which are pre-Sumerian. Prof. Langdon announced the discovery[1] in the pre-Sumerian ruins at Kish of a seal which is rectangular in shape and covered with pictographs " quite similar to the seals of the Indus Valley." They differ from the Sumerian seals, which are of stone, cylindrical, and concave-sided, and are of white, red and black colours. Our colours are blue and green. The conical seals of Syria and the straight-sided ones of Egypt are of later Babylonian times.

The seals have been elaborately described by Mr. Mackay in chapter 21, and profusely illustrated in the plates. They could be arranged in chronological order along the lines already suggested by me in 1930.[2] To the earliest period must be assigned the square seals with no boss, inscribed on both sides. Six are rectangular, with plain inscriptions and without animal devices. Two of these are of steatite, and two of pottery. The latter are very unusual material. Of these twelve, seven are pierced with a small hole to take a cord. Two are very thin, being 0.12 inch thick, and the hole of those pierced is 0.1 inch in diameter, bored from both sides of the seal. The edges of the holes show no wear. In fact, they could not have been much used at all, as steatite tends to split along the cleavage planes. The designs on them are geometrical patterns, triangular and quadrilateral. One of them shows a short-horned bull on the obverse. It is clear that these seals are generally connected with the pottery. One of the earliest has the figure of a unicorn, which is really the side view of a bull or an antelope, and solar symbols. It is recorded in the report of the Archæological Survey for 1928-1929 that this seal (1.22 sq. inch) was picked up in one of the earliest strata, styled by Sir John Marshall, Intermediate III (graded from top to bottom). This stratum is lower than Intermediate

[1] *Jour. Ro. Asi. Soc.* (London, 1931).

[2] *Aryan Path*, January, 1930.

II (4250 B.C.) "by a considerable gap, averaging well over 4 ft." "Houses in it show marked effects of flooding." "At that period, too, the site must have been abandoned for a considerable time. Portable objects are, therefore, rare at the lower levels." Now, Intermediate II is anterior to Intermediate I, which from its data is itself pre-Sargonic (3000 B.C.). Thus the most modest estimate would yield the fifth millennium B.C. for the level of Intermediate III to which the earliest seals (so far known) belong.

To the next period belong the rectangular seals with perforated convex back, of which 64 have been found. Three of these are pottery seals, and they contain no pictographs. That the engraving was primitive is gathered from the fact that the inscriptions on them were cut before the seals were baked. Seals of this class (e.g. No. 402) were picked up from the Hargreaves area at a higher level than those detailed in the previous paragraph—8 ft. below the surface.

To this stage belong the seals with the perforated boss. Three of these are round and considerably worn, and the perforated boss is subdivided by a groove. One of them (No. 576 HR surface level) reveals the *svastika* sign and the proto-Elamite design of squares found in the earliest period of Susa (Susa I) and Baluchistan. But the greatest majority, numbering 328, are square seals of varying thickness, of which the most favourite size is 1·1 inch. Such designs are not found in Babylonia or in Egypt. The date of the earliest period of Susan culture is given in *Cambridge Ancient History* (Vol. I, p. 362) as *circa* B.C. 4250.

To the fourth stage belong the seals deeply incised on both sides. One is rectangular, on very thin steatite, and has an inscription in three characters. The boss is well finished. The other is round, has no boss or hole, and is very thin and small. It has the very unusual tree motif, familiar to us in the punch-marked coins, which appear to me to be the lineal descendants of these seals. Probably of this same period, and imported, are the cubs seals, the irregular lines of which make forging impossible. Examples of these are found in Kish, Jamdet Nasr and Susa II, in Mesopotamia, Crete and Egypt (early). They were probably weights used in trade. The culture of Susa II has been assigned to *circa* 4000 B.C.

The fifth and latest stage is marked by the cylinder seals. As regards cylinder seals of ivory, Mr. Mackay has rightly opined, "It is possible that these so-called seals are no seals at all."

But in the next season the Survey lighted on a regular cylinder seal thick and very like pre-Sargonic. These strata must, therefore, be assigned to about 3000 B.C. As Mr. Mackay himself remarks, "A cylinder seal very like pre-Sargonic indicates 3000 to 2750 B.C. for the upper strata of Mohenjo-daro."

V. ANIMALS ON THE SEALS

The animal figures on the seal form a very interesting study. The short-horned bull with neck swathed in garlands is of a type found at Ur of the pre-Sargonic period by Mr. Woolley. The rhinoceros appears rarely, and more often in the clay model. It is rendered with fidelity, even to the wicked pig-like eye. The animal is conspicuous by its absence in Elam and Mesopotamia. On the other hand, the lion is not on any of the seals, though it appears on the archaic seals of Elam and Sumeria, and frequently at Kish. The tiger is proved by its being striped and stands at a manger, as on the Telloh seal in the Louvre, and has its analogue in the hyæna and man on the cylinder seal from Kish. The tiger and the crocodile represent the connection of the Indus with the Gangetic Valley. The Lower Gangetic region is the home of the tiger. The crocodile symbolizes the Ganges in works of art of historical times. It is possible, too, that the figure of the tortoise that has been discovered symbolizes the Jumna. So does the pipal tree, which is the tree of Eternity and the tree of the folk in Vedic texts.[1] The fish-eating gharial (gavial) appears on three seals and is peculiar to India. The elephant figures on 15 seals, though sparsely represented in the pottery. The antelope was the sacred animal of the Āryas. On two seals it has a shrub in front, a very common motif on archaic Sumerian seals. Its short tail and curling horns show that it resembles the unicorn, but has two horns. In fact the so-called unicorn has since been found on a Harappa seal with two horns like those of the ox. Sir John Marshall now agrees that it is the animal in profile, whether ox or deer, which is always represented with a single horn on Sumerian seals.

But the most interesting animals on the seals are the horse and the humped bull. The heavy wrinkled dewlap does not appear on the seals or on the pottery of Elam or Sumeria, but is found carved on the archaic bitumen vessels from Susa II. The coloured pottery figure of a bull discovered by Herzfield in Iran and referred by him to the bronze period

[1] See my *Indian culture* Vol. I. p. 117 and Vol. II. p. 29.

appears to have a definite hump (*Illustrated London News*, June 1, 1929, Figure 24). The clay sealing of Yokha (Babylonia) has the humped bull and pictographs. The animal appears to be on a lime-stone bas-relief of about Gudea's time (2400 B.C.). It is a common motif in the Mehi ware of Baluchistan. The two-horned bull was an arrival in Sumeria, where only one representation of it has come to light—at Telloh. On the other hand, the buffalo is not known east of the Indus, appears in west Sindhian pottery, and profusely in the pottery further west. The humped bull was unknown in an aboriginally wild state, and the development of the hump was an Indian art. The hump is described in numerous Vedic texts of the tenth book of the *Ṛig-Veda*.

Remains of the horse are found in the higher levels, and "paucity in the lower levels may be due to the soil being impregnated with saltpetre." Mackay's rough terracotta figurine of a horse was found at a depth of 15 ft., along with camel-bone in SD area. The animal is described in numerous Ṛig-Vedic texts. Different kinds of horses were known and differentiated in the later Vedas. Langdon has read the ideogram for horse (*Anśu Kur*) in archaic Sumerian of the fourth millennium B.C. But the horse is an importation into Sumer and appears only in one instance of about 3000 B.C. In the tablets of Hammurabi about 2100 B.C., the horse was re-discovered as the 'ass of the hills' or the 'ass of the east,' though meantime it had travelled into Europe. In Pomerania was recently discovered a representation of the horse of about 2300 B.C. It was carved in amber by neolithic man in the modern site of Dantzig and compares with Sumerian carving on bone.[1]

VI. SYMBOLS ON THE SEALS

The most interesting symbols on the seals are the wheels and the *svastika*. The wheels appear in the most primitive fashion in the pottery (Plate 153, Fig. 24). The wheel has a raised hub only on one side, while Sumerian wheels have the raised hub on both sides. We have the same kind of wheel at Anau, where also the axle revolved with the wheel. Toy-carts were most popular in India, and we have a cart-model made of bronze and another of pottery, a veritable ancient *mṛichchhakaṭikā*. The vehicles of Mohenjo-daro are accepted as of more ancient pattern than those of Kish or Ur. The last found on a limestone slab at Ur is dated about 3200 B.C. by Woolley, of the same age as the pottery model of Anau discovered by Pumpelly. Woolley

[1] The sculpture is now in the Berlin Museum—*Times of India*, October 20, 1933.

considers as of earlier date (about 3500 B.C.) the four-wheeled wagons pictured on mosaic standard at Ur,[1] and Mackay assigns to this date the wagons and chariots of pre-Sargonic Kish. We have no analogue in Egypt till the Hyksos period (1800 B.C.).

The *svastika* figures on several seals. In one (HR 4503) the obverse is an involved sign of triangles. In another (No. 576) there is a design of squares found in Susa and Baluchistan in the proto-Elamite or earliest period of Susan culture. The symbol migrated from India to all parts of the ancient world. It is found on the pottery of Susa and Musyān. At Troy it is a motif decorating the spinning whorl. Dr. Schliemann suggested the identity of the Greek triglyph with the *svastika* cross. Evans records its presence in the palace of Minos in a simple form with curved arms, and in a complex form on an ivory seal of the third period in Early Minoan. In the next period (the first of Middle Minoan) it appears on pottery first with the arms curved and later with straight arms. In Babylonia it has exactly the form in which it is used in modern India.[2] In the earliest cuneiform (*c.* 3000 B.C.) it is in the form of a cross in a square, and denotes the sheep-fold. On the cylinder seal in the Newell Collection (Chicago, 1934, p. 145) it appears as X-shaped design "with loops at its four ends." On a seal (No. 168, *ibid.*) it looks like a Maltese cross. It is among the symbols at the temple of Karnak[3] and among the signs at Tell-el-Hesy.[4] In the latter it is merely a plus, and in the former it is surrounded by pellets exactly in the same way as in the 'Ujjain symbol' on the early Indian coins. In ancient China there is also a smaller arm at right angles to each of the arms of the Indian *svastika*, and in Persia we find a triangle at every end.

VII. THE SCRIPT

The script on the seals is Indian and Aryan. It is the earliest known form of the Brāhmī alphabet, as opined by Prof. Langdon. The symbols and legends on punch-marked coins are its earliest descendants. None of these signs can be shown to have a syllabic value. Smith and Gadd consider that parts of the body are hardly represented. But there is clear evidence of the descent of *pa* from the *pāda* (foot), as marks for fingers are found in the figures. It appears, likely, too, that the

[1] *Sumerians*, p. 51.
[2] Petrie: *Decorative Patterns of the Ancient World*, pp. lxix and lxx.
[3] Muller: *Egyptian Researches*, Plate 43.
[4] Clodd: *Origin of the Alphabet*, p. 175.

letter-form *ha* is derived from the hand (*hasta*) figuring in the pictographs. Anyway the neat monumental forms of the pictographs indicate a long period of evolution.

Several attempts have been made to unravel the pictographs. The earliest was that of Wadell.[1] It was based on Sir John Marshall's earliest theory of the Indo-Sumerian origin of the culture, and was foredoomed to failure. Next came the view of Langdon (1927) that the script has no connection with Sumerian or proto-Elamite signs, and that its resemblance to Egyptian pictographs would be suggestive but for the presence of detached accents distinguishing it from any of these systems. He holds that Buhler's theory of the origin of the Brāhmī is entirely unwarranted. As the Phœnicians evolved their script by choosing signs from the vast variety of Egyptian pictographs, so did the Indians evolve the Brāhmī alphabet by choosing the necessary signs from the symbols found in proto-Indian culture. If strata are to be distinguished, the inscriptions on the small stone rectangles of Harappa are earlier than those of Mohenjo-daro. The mystery will probably be cleared up by the possible discovery of bilingual legends in the course of the excavations.

Of clay tablets as in Mesopotamia no trace has been found in the Indus Valley. The characters are ingeniously modified by the addition of accents, strokes and other expedients. Signs are combined in the form of conjuncts. Small groups of strokes never exceeding 12 have a phonetic instead of a numerical value. The writing appears to be from right to left and in cases also boustrophedon (*nāgarī* or serpent-wise), as in the Erragudi rock inscription of Aśoka recently discovered in South India. All these features strongly suggest the purely Indian character of the script. Jayaswal and Pran Nath have recently sought to connect the letter-forms here with those of the later Brāhmī (*Ind. Ant.*, 1933; *Ind. Hist. Quarterly*, 1933). No explanation can be considered satisfactory which does not indicate the meaning of the accents, the diacritical adjuncts and the conjunct letter-forms. The pictographic scripts are found on seal-like talismans, pottery fragments and copper tablets. The so-called 'seals' may not be seals at all, as no trace of 'sealing' has been found up to the moment of writing. Nor is there evidence of bitumen or resin being used for seal impressions. As Mackay points out, if the seals were used for coloured impresses, they need not have been cut so deep. Some seals are compartments to hold an amulet in

[1] *Indo-Sumerian Seals Deciphered.*

bark or leather folded small, more probably in thin metallic sheets on which talismanic drawings are carved at the present day. Several such hollow seals have been found since 1927. Many inscriptions end with the same sign if read from right to left.

The question has been raised, why was the superiority of the cylinder over the stamp seal not appreciated here? It seems to me that this was due to the nature of the material used. The square or oblong setting suits the surface of the parchment or papyrus, and we know that oblong surfaces were always prepared—whether on palm leaf or on copper sheet—for writing on in this country. The cylinder suited the clay tablet of Mesopotamia. The cylinder tablets—only five—found in India are of ivory, long and thin and unperforated. They were "no seals at all."

VIII. CERAMICS

The excavations of Nineveh, in a mound dug up 92 ft. to virgin soil, reveal five successive cultures going back to 5000 B.C. The earliest is a coarse, plain, incised ware which is succeeded by a brilliant three-colour decoration on a varnished slip. Third comes the stage of infant urn-burial, grey varnished pottery, seal impressions with animal drawings, toys and early examples of copper and bronze. Fourthly, we have the Erech red ware and seal impressions of *circa* 4000 B.C. Latest of all are the wheel-made painted pottery, incised pottery and Sumerian seal impression.

The tombs of the city of Tepe Gaura antedate the royal tombs of Ur and are of about 3700 B.C. They contain plaques and combs of ivory and beads of lapis lazuli, gold and carnelian. Mesopotamia in this age was connected with Anatolia and Syria to the west and with Baluchistan to the east. Pottery of the painted Ur type carries this to the fifth millennium B.C., the delicate egg-shell painted pottery.[1]

Woolley suggests the sequence in time. The early five wares of Susa may be assigned to about 4250 B.C. The five wares of Musyān and Tel-el-Obeid betray distortions of the transitions from natural to geometric designs and belong, according to Frankfort, to a later stage (*c.* 4000 B.C.). Still later is the polychrome pottery of Kish I, Susa II and North Syria. Latest of all are the earliest remains at Ur, of about 3100 B.C.

[1] *The Times*, London, May 5th, 1933.

Certain distinctive features of Indian pottery have to be studied so as to arrive at a typological comparison yielding a chronological sequence. The comb motif is found only on pottery of Susa I, but not earlier, and this has been dated B.C. 4250.[1] The flowing designs derived from plant-forms are distinctive of the pottery of Sindh, Baluchistan and Seistan. Zigzag borders connect the Nal and Susan pottery. Hemispherical and triangular borders occur in Seistan and Sindh. Similarities to Sumerian are the exception and not the rule. Jar lids like those of Sindh are found at Jamdet Nasr with painted ware of 3500 B.C., but not found outside India in any other period.

There is no thin fine ware in Sindh as at Susa or Nal or in Seistan. Red was hardly used in monochrome decoration, and polychrome ware is found only in the upper levels. Hargreaves has pointed out that the painted ware of Nal resembles that of Susa I. Opinion has differed as to the relative ages of the pottery of Nal and of Sindh. Some motifs help in deciding the issue—the hemispherical border, for instance. It is the motif, common at Susa, of a file of birds whose heads are lost. The motif has the curved surface uppermost at Mohenjo-daro, but either way at Nal. It is clear that the significance appears in the former place, but is lost in the latter, where therefore it must have been a borrowed motif. The pottery of Seistan, which is earlier than that of Nal, and its elephant-statuette point to India. Dr. Frankfort thought that the occurrence of lapis lazuli might point westwards, but it is found in Ajmer.

Red pottery was imported into Susa I and partly produced there according to the technique of Anau. The earliest pottery of Anau displays the Metope style, parallel lines in large blocks of Cappadocia. The finds at Seistan show parallels to Anau I and Anau III. Anau II is related to Hittite pottery and the early ware from Samarra which intruded into Mesopotamia. The finds at Seistan enable us to connect Armenian and Persian fabrics.[2] The sloping oval motif of Seistan is common in Honan and occurs once in the Tripolje culture. The archæological context shows numerous signs of intercourse with the East, such as the mace-head and the pear-shaped pot. Decorative motives and the ceramic technique were spread in China, Armenia and south-west Persia. It suggests a centre of diffusion south of the Caucasus and the Caspian, probably in the regions of the Hindukush. The Amri excavations have revealed pottery earlier than that of Mohenjo-daro. The bull

[1] *Cambridge Ancient History*, Vol. I, p. 362.

[2] Frankfort: *Studies*, Vol. II, p. 187.

pattern occurs here as at Nal and further west. The thin ware of buff or light red clay with purely geometric patterns, mostly rimless beakers and bowls, is bichrome, in contrast to the polychrome of Nal, and is possibly earlier. The pipal and bull patterns occur everywhere. Sir Aurel Stein has no doubt that Nal pottery is later than that of the Indus Valley. The thinness and details of decoration of Nal pottery bring it into line with that of Susa I, which is earlier than that of Jamdet Nasr. The last is itself prior to the pottery of pre-dynastic Egypt. Migrations from India westwards would best explain the known facts in Asiatic ceramics.

" If Mr. Mackay is right in assigning the Nal ware to about 3000 B. C., the Mehi and Loralai wares would go to the fourth and fifth millennium B. C. and with them the Indus red-and-black pottery. This latter succeeded an earlier and different culture in Lower Sindh. The pale and polychrome pottery possibly antedated the black and red throughout the Indus country."

IX. THE CULTURE—PROTO-INDIAN

We shall now consider the bearing of the finds on the antiquity of Indian culture, its origins and affiliations. It is first of all necessary to warn the student of the dangers of an *argumentum ex silentia* in regard to matters antiquarian. It is the danger that led Sir John Marshall to christen the culture as 'Indo-Sumerian' and later on as 'The Indus Civilization.'[1] Non-existence of artifacts other than in the Indus Valley was due entirely to the peculiar difficulties of finding suggestive mounds in the Ganges Valley and its comparative neglect by the Archæological Survey. The implications of the finds strike any reader. There was connection between India and Mesopotamia and other parts of the ancient cultured world. There was connection with South India, from which the pearl and conch materials should have come, and with the west coast, which accounts for the supply of carnelian. Some of the materials came from the region of the modern Rajput States. From Ambala it is not a far cry to the heart and centre of Āryāvarta, the region of the Doab of the Ganges and the Jumna, and the lands further westwards to the Sutlej where was the lost course of the Sarasvati river. The wide extent of the civilization, and its entirely Indian character demand our terming the period of *circa* 5000 to 3100 B.C. as the proto-historic period of Indian culture. It is the Tretāyuga of Purāṇic legendary history.

[1] *Arch. Sur. Report*, 1925-26, p. 75.

That it is Indian does not permit of a doubt. In the language of the latest Archæological Report (published 1933), "Goddess in a pipal tree, Yogi Śiva and rosette of seven pipal leaves tend to give a stronger Indian than Western orientation to this culture." The author of the latest archæological memoir[1] in describing the ceramics of Sindh feels constrained to say that "it is not easy to decide whether the migration started from the East or from the West." Details, architectural and other, help in deciding the issue. The pattern of brick at Mohenjo-daro and Harappa is plane and never plano-convex, and its dimensions are $11 \times 5\frac{1}{2} \times 2\frac{3}{4}$ inches. The variations from this standard are neither numerous nor significant. These are the dimensions retained for millennia in Indian tradition, as is proved by the genuinely ancient text of the *Kaśyapa Saṁhitā*. The trefoil pattern on the robe of statuary is the well-known *vilva* leaf of India (Plate 98) and was copied in the Sumerian 'Bulls of Heaven.' The jar-cover (Plate 82, type 10) appeared once at Jamdet Nasr and disappeared through the ages, whereas it has persisted in India. The 'Indus' implements of copper and bronze are very primitive—the blade-axes, for instance, as compared with the curved-edged saw of Susa I.

The conundrums propounded by the author of the monumental work on this civilization are easily answered in the light of subsequent finds. He held that the Vedas were ignorant of city life, knew offensive weapons and defensive iron armour, did not mention fish as diet, knew the horse, worshipped the cow rather than the bull, were aniconic, gave prominence not to the Mother-goddess and Śiva but to the fire cult, and opposed phallus worship. But Pischel and Geldner held that *pur* and *pura* in the Vedas certainly refer to fortified cities, as they doubtless do in the later Vedic texts. The term for iron does not occur in the *Ṛig-Veda*. Indra is frequently described as the bull in Vedic texts, and Agni also in many passages. In fact, the earliest pictorial representation of Agni in Vedic verbography is as a bull with four horns. Defensive armour has been brought to light by Mr. Mackay. Figures of the horse have since been discovered. There are some figures of the cow like those of bulls, on the pictographs. Iconism is everywhere apparent, but so is it in the Vedic texts, as I have shown elsewhere with citation of numerous hymns.[2] There is, therefore, nothing in the finds that would be inconsistent with what we know of ancient Indian culture from other sources. 'The huge

[1] No. 48, published 1933.

[2] See my article "Vedic Iconography" in the *Rūpam* for 1930.

projecting lobe of the ear' of the figures was certainly *not* due to the crudeness of the primitive artist's conception, as an archæologist puts it. It persists in the ear lobes, widened to take in huge ear ornaments of several primitive races in India in our own times. The conch-shell and discus (*chakra*) had ceremonial significance attached to them.[1]

The age of the finds is that of the later Vedic texts. Scholars are agreed that the earliest stratum of literature in existence is that embodied in books II to VII of the *Ṛig-Veda*. These reveal familiarity with the Himalayan region. There is no reference to salt at all, though rock-salt abounds in the Punjab. The very first mention of salt-ground (Ūsha and Usha) occurs in the texts not of the *Ṛig-Veda*, but of the *Yajur-Veda*. The heart and centre of Ārya dominion reflected in these earliest books is the region between the Himalayas and Rajputana, bounded by the upper course of the Ravi on the west and by the Ganges and Jumna on the east. It is only in the tenth book of the Ṛig-Vedic hymns—accepted as chronologically the latest stratum—that the Punjab is disclosed clearly to the view. There is no mention, in the entire body of the hymns, of the numerous mouths of the Indus. The southward migration to Sindh was not yet an accomplished fact. The home of the Aryan forces was north and east of the Sutlej, as Sudas the Vedic hero had the river Jumna on his eastern frontier, and Sage Vasishṭha describes the crossing of the rivers from the eastern side, commencing with the Sutlej and going as far as the banks of the Ravi.[2]

Books II to VII of the *Ṛig-Veda* point to a much earlier age than the epoch of the finds—fifth and fourth millennium B.C. The finds are of the age of bronze and copper implements, but the *Ṛig-Veda* indicates the use of implements of bone and stone. I have detailed elsewhere the traces of the Stone Age in the Vedic texts.[3] The fighting implements *adri* and *aśani* (*Ṛig-Veda* I and VI) refer to sling-stones. *Vajra* was the club of stone. *Dhishana* is the sharpened neolith (*svadhiti*). The knife commonly used for cutting the sacrificial grass was made out of the rib of the horse, and was, therefore, known as *parśu* or *aśva parśu*. The axe used in cutting the trees and felling forests was known as *paraśu* from which the *pilakku* of Babylonia and *la-brys* of Crete have alike descended.

[1] The Report for 1924-25, page 72.

[2] *Ṛig-Veda* III, 33 VII. 18, 33, 83.

[3] *Proceedings of the Fifth Oriental Conference*, Lahore, 1928.

Secondly, human figures in the finds are draped in the *upavita* mode of India. This mode of tying the robe is peculiar to India, and was discovered here in the later Vedic Age. The robe passes round the upper left shoulder and is tucked up after it passes under the right arm. In a later text (*Tait. Āraṇ.* i.2) of the *Yajur-Veda* we find it described in detail: The Devas and Asuras were at war. The Asuras fell upon the Deva forces in overwhelming numbers. The Devas then discovered this expedient for overcoming them. They found that sexual energy was located in the left half of the body of man. If it was localized and focussed, it could be transformed into power. This was the secret the Devas discovered. They marched into battle with an animal skin or a piece of cloth covering their left side in the manner described above. Thus were the enemies overcome. It is interesting that, while the *Ṛig-Veda* is full of references to shields and coats of mail, there is no allusion to the discovery or to the *upavīta* custom to which it led, in the entire range of Ṛig-Vedic literature.

Thirdly, the details of the social picture revealed in the finds accord with the age of the later Vedic texts. The Earth-goddess appears in the finds. She finds mention for the first time in the latest book of the *Ṛig-Veda* (X.18). There is no clear passage in the *Ṛig-Veda* showing animals associated with a god or goddess even as vehicle (*vāhana*). The animals which we find portrayed around the divine figure on the seal have a parallel in the four animals depicted around the central figure of a god in the *Yajur-Veda* (*Tait. Saṁ.* V. 3.1). The animals on the seal are the elephant, rhinoceros, crocodile, lion or tiger, and, in the text, the goat, sheep, tiger and lion.

The humped bull appears prominently in the ruins. The Vedic word for the hump is *kakut* or *kakubh*. It occurs in the earliest books of the *Ṛig-Veda* entirely in the sense of a mountain-peak or a prominence (e.g. *kakubh parvatānām* in *Ṛig-Veda* IV. 19.4.). Nor is there any other word denoting the hump in the earliest books (II to VII) of the *Ṛig-Veda*. The earliest reference I find to *kakubh* as denoting the hump of the bull is in the eighth book (*kakubho gavām*: *Ṛig-Veda* VIII. 20. 21) and to *kakut* in the same sense in the tenth book.[1]

The tiger appears on the seals, but the animal is conspicuous by its absence in the Rig-Vedic texts, though there are numerous references to it in the other Vedas. A *nāga* figure was unearthed at Mohenjo-daro,

[1] *Kakudmān ṛṣabhaḥ* in *Ṛig-Veda* X. 102-7.

and Nāgas are mentioned in the *Yajur-Veda*. The bronze or copper knife (*lohitasvadhiti*) appears first in the *Atharva-Veda*, as do bangles and bracelets (found in the Indus Valley) as indispensable items of women's jewellery.

It will be clear from the foregoing considerations that the finds at Mohenjo-daro belong to the later Vedic period and that practically the whole of the Ṛig-Vedic hymns (except perhaps the tenth and latest book) is anterior to the finds in date. The lower limit to the age of the Ṛig-Vedic hymns is, therefore, the fifth millennium B.C. On the strength of the astronomical data of the *Ṛig-Veda*, I have already shown that the anterior limit of the Veda has to be pushed to about 11,000 B.C.[1]

RELIGION

The religion disclosed by the finds shows a variety of grades and complexity of social life. The central hall of Harappa is probably an evidence of a communal life of common sacrifices and public worship. The dimensions of bricks are practically the same as those used for the fire altar. The halls open into the rooms, their sides face the cardinal points, and are of the horizontal style of construction. The numerous figures of the goddess, the toy figures read as chessmen and reminding one of the sacrificial post, are possibly reminders of the ritualistic religion of the time. It was not long ago that the Archæological Survey discovered a golden image of a goddess, at the sacrificial mound of Lauriya Nandangarh, in ruins of about the ninth century B.C. (*Cambridge History of India*, Plate XI, figure 21). The figure resembles in anatomical detail some of the figures of the goddess on the seals. In the Madras museum is a specimen of an ancient sacrificial post of wood, and the central pillar to which the victim was tied resembles the 'chessmen' of the finds.

But side by side with the religion of ritualism was that of iconism. The transition from verbography to iconography in Vedism may be observed in various hymns even of the *Ṛig-Veda Saṁhitā*.[2] In *Ṛ.-V*. II. 33.9. we find *Babhruḥ sukrebhiḥ pipiśe hiraṇyaiḥ*, which Prof. Wilson translates thus: "Babhru shines with golden ornaments." So also in *Ṛ.-V*. I.21.2 we have: *Indrāgni śumbhatā naraḥ*, which Prof. Wilson

[1] *The Aryan Path*, April, 1931.

[2] See my papers and Prof. Macdonell's in the *Jour. Ro. As. Soc.* for 1917 and 1918. Also my article "Origins of Hindu Iconism" in the *Indian Historical Quarterly*, Calcutta. 1927.

translates into "Decorate Indra and Agni with ornaments." In *Ṛ.-V.* III. 4.5 *nṛipeśas* is explained by Prof. Roth as 'adorned by men' and by Prof. Wilson as 'of sensible shapes.' *Ṛ.-V.* II. 33.8 speaks of Rudra as white-complexioned (*śvitiche*), which, taken along with *pipiśe hiraṇyaiḥ* (*Ṛ.-V.* II. 33.9), might suggest our taking *nṛipeśas* as 'having the form of men.'

Dr. Bollenson discovered a reference to images of Maruts in *Ṛ.-V.* V. 52. 15: *nu manvāna eshāṁ devān achchha*—"to the gods of these (images) (the Maruts)." *Eshām* in the passage seems to refer to something concrete which could be pointed to on the spot. Again in *Ṛ.-V.* IV. 24. 10 we have reference to an image of Indra which was to be hired out for a rent of ten cows, and which was to be returned after use. This is the earliest passage which definitely suggests the first idea of an Indra festival. It is apparently referred to in *Ṛ.-V.* I. 10. 1: *brahmāṇas tvā Śatakrata udvaṁśam iva yemire*—"Worshippers held thee aloft as it were (on) a pole." The clearest evidence I find is in the *Atharva-Veda* VII. 3.1: *Svayā tanvā tanūm airayata* (of which there is a variant in *Tait. Saṁ.* I. 7.12)—"With your own body enter another body." The reference here could only be to concrete representations of gods.

Some elaboration of iconographic detail may be detected in various passages: Indra is conspicuous for his *śipra* as he is referred to in numerous places as *suśipra* and *hiriśipra*. (*Ṛ.-V.* I. 9.3 and VI. 29.6). *Śipra* most probably means the nose as in *Ṛ.-V.* V. 45.6, where Manu is said to have overcome the *viśiśipra*, 'noseless' peoples, *i.e.* peoples whose nasal ridge was not prominent. The invisible wind-god (Vāyu) is referred to as *darśata* ('of pleasing appearance'), which could only mean that Vāyu images were made to look beautiful. The term *nāsatyau* (Aśvins) is found in the Boghaz-keui inscription, and appears to be one of the oldest epithets of the twin-gods. Yāska explains the term as *nāsikāprabhavau*. At any rate he thinks that *nāsatya* is derived from *nāsā* (the nose). The prominent nasality of these Aryan gods seems to be indicated here. Varuṇa is conspicuous as *bibhrad drāpiṁ hiraṇyayam*—"wearing a golden armour." The individuality of Rudra is outlined by epithets *Kapardin* (*Ṛ.-V.* I. 113.1), *Tryambaka* (*Ṛ.-V.* VII. 59.12), *Krittivāsas and Pinākin* (*Tait. Saṁ.* IV. 5). The Vedic hymner now refers to one, now to another, of these attributes, the sum total of which makes up the concrete representation of the god.

Along with this anthropomorphism there was the development of symbolism, each deity being regarded as possessed of structural details corresponding to the known functions he exercised. Taking Agni for instance, we find this description of the god in *Ṛ.-V.* IV. 58.3 (cf. *Ṛ.-V.* I. 31.4 and 13): "Four-horned is this great bull, three-footed, two-headed and with four hands. Bound in three places he roars aloud." The hymn is found again in the *Mahānārāyaṇa Upanishad* of the *Yajur-Veda*. As regards the other popular god Indra, we find his thunderbolt mentioned in *Ṛ.-V. I.* 100.18 and *Ṛ.-V.* II. 12.10, while *Tait. Sam.* IV, 41 describes it as *yuktagrāvā*, 'made of stone.' We have concrete evidence that these passages either describe or at any rate suggest iconographic details. There is a sculpture of Agni corresponding to the above description in the Chidambaram temple,[1] and the figure of Indra with the *vajra* in the Sarnath museum.[2]

The representations on the seals, and the objects in the round have, therefore, to be carefully considered. Some were gamesmen, some talismans or amulets; but others were objects of cult worship. Ring-stones had some cultural, fetish or magical significance, as in similar ones, dug up at Taxila millennia later; there are nude figures of a goddess of fertility engraved inside the central hole. Some were baetyllic and some 'phallic' stones. It must, however, be remembered that Barth does not see 'phallus' in the *liṅga*: "There is nothing indecent in the form of the figures. In appearance they are pure symbols, in no respect images, as we meet with elsewhere, in Italo-Grecian antiquity, for instance." The *liṅga* represents probably the cup and rod used in ancient times for generating fire by friction. Even the Babylonians venerated the fire-stick as the 'rod of light.'

Some symbols represent the syncretism of zoomorphic cults. One seal has a human-faced goat or ram; another is more composite including a bull face also. On seals 378, 380 and 381 are forms composite of ram or goat, bull, elephant and man. A parallel is in the human headed lions of Mesopotamia and in the Sumerian Eabani who is half man, half bull. The man-lion or Narasiṁha incarnation of Vishṇu is the prototype of this idea in Purāṇic literature.

The pipal tree figures on several seals. It is the tree of Eternity in the Vedic and the tree of Wisdom in Buddhist texts. On seal no. 387 the tree is between the jugate heads of two antelopes. It is sometimes

[1] H. Krishna Sastry: *South Indian Images*, figure 147.
[2] *Catalogue of the Sarnath Museum*, No. 24, p. 318.

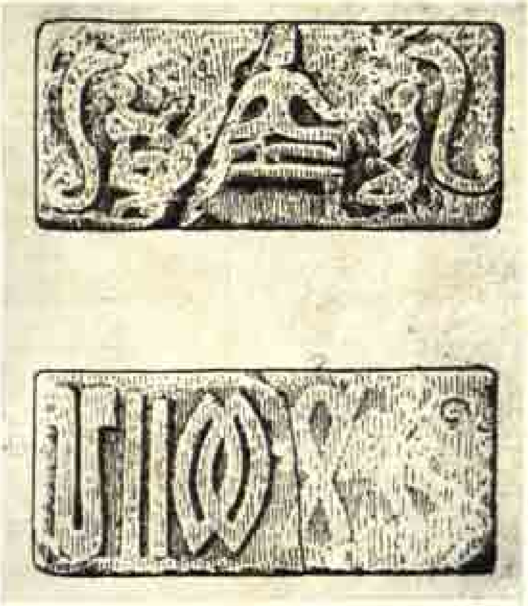
conventionalized into the form of an arch surrounded by leaves, in which the deity is framed, as if standing in a shrine (PL. XII, fig. 18). Vedic literature represents the tree of Eternity as having its roots on high and its branches spreading downwards. Its leaves are the light contained in Holy Writ, and the goddess of Wisdom emerges therefrom. The sacred cedar of the Chaldeans is likewise the tree of Life, and the name of Ea, the god of Wisdom, was supposed to be written on its core. Both are represented alike, but the cedar was not native to Ur and went probably from India.

In an oblong sealing from Harappa (XII. 12) a nude female figure is depicted upside down with legs apart and a plant issuing from her womb. The posture differentiates it from the Minoan and other figurines which have the right hand raised to the forehead in prayer or reverence.[1] It is the same as on the Bhita relief of the Gupta Age, in which a lotus issues from her neck (instead of womb). Evidently it is *prakriti* or the Earth which is described as *uttāna* or facing upward in the later Vedic texts and as *āṅgirasa* or creative principle (*Tait. Āraṇ.* III). A later Zhob type of figure wears a sort of hood over her head and a series of necklaces or tongues, and has a grotesque face, cavernous eyes and distorted mouth. It has no emaciated body or lolling tongue, but may be a foreign counterpart of the goddess Kālī.

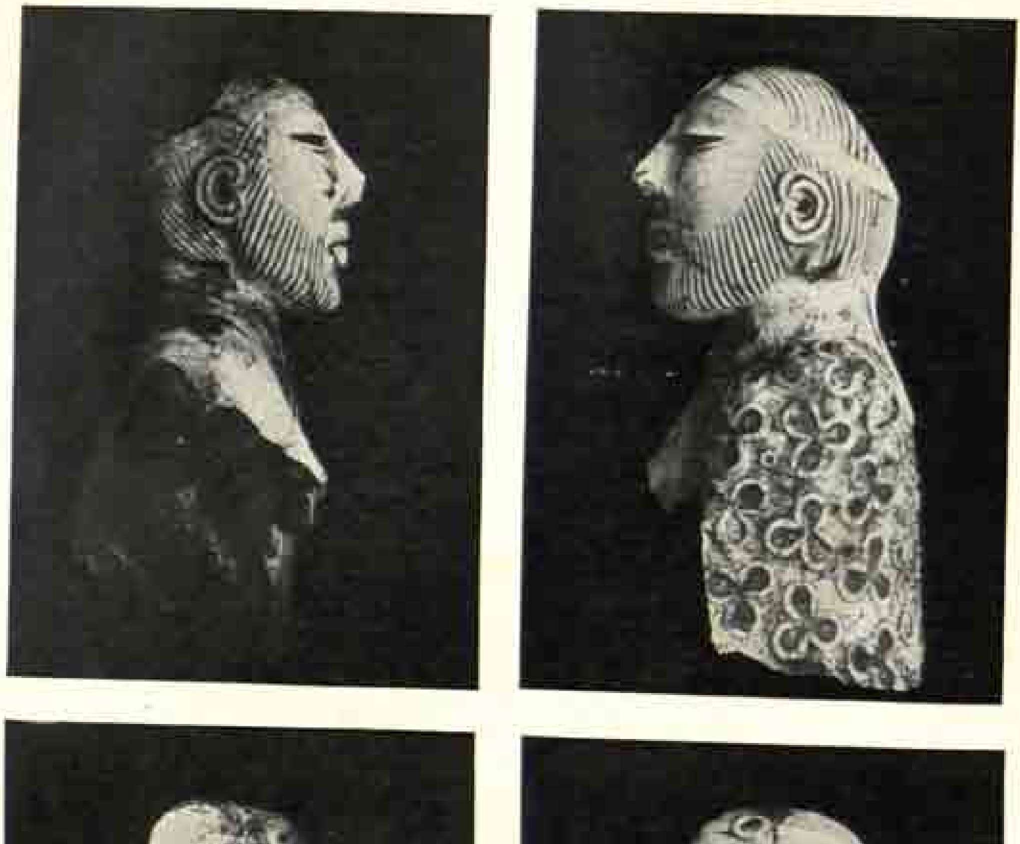
On one seal is a cross-legged figure of a deity on a tablet of blue faience with Nāga worshippers to right and left and pipal leaves over the figure. The pose is not Buddha-like (*padmāsana*), and one of the legs is dangling. Another shows twin heads of antelope springing from the stem of a pipal tree. A third is that of a goddess fighting with a lion, possibly Durgā. A fourth is that of the goddess of the lamp at Harappa, whose ears are extended so as to serve as cavities for holding the oil for the wick on each side. Such Dīpalakshmī figures (but holding the oil in hand) appear in the metal work of India in later times.

Plate XII, figure 17 shows a three-faced god seated on a low Indian throne in *yoga*, with legs bent double beneath him, heel to heel, and toes turned upwards. His arms are outstretched, and his hands rest on the knees. From wrist to shoulder the arms are covered with bangles, eight small ones on the left arm and three large ones on the right. Over the breast is a triangular pectoral (*kavacha*). A pair of horns crowns the head, and round the waist is a double band. An elephant and a tiger are to his proper right, a rhinoceros and a buffalo to his left. Beneath

[1] Evans: *Palace of Minos*, II. p. 507 and fig. 365.



A SEAL OF MOHENJO-DARO
Obverse and Reverse



A LIMESTONE STATUE OF A YOGI

Different Views

the throne are two deer, with horns turned to the centre. On the top is an inscription in seven letters. The attitude is what is known as *padmāsana*. For the horns of the god, those of the bison are used. Ward assures us that the bison was never found in Mesopotamia and on the seal cylinders of western Asia.

The symbolism of four animals round a central divine figure is expressed verbographically in the *Yajur-Veda*. We have the goat, sheep, tiger and lion round the central figure of Purusha.[1] The goat is the vehicle of Agni, the elephant of Indra, the lion of Durgā, and the buffalo of Yama. The bone of the rhinoceros is sometimes buried near a field to make the crops grow. The three-headed animal figured on seal 382 is a combination of the bison, unicorn and ibex. It may be taken as representing the Vedic triad of Agni, Vāyu and Āditya (Fire, Wind and Sun). The last as Rudra has his theriomorphic representation in the *Yajur-Veda*, where he is compared to a fierce animal resting on his haunches, in the attitude of leaping on his prey. The second is always symbolized by the ibex, and the first by the bull. The conception was evidently copied by the Greeks, as the three-eyed Zeus at Argos was explained as lord of the sky, sea and earth. Here is a contrast with Chaldea, where Ea, Dau-Kina and Ana were the 'vast souls' of the sea, earth and sky, but there was no attempt at unification into a single syncretism.

Side by side with these cravings for something definite and concrete, were attempts at spiritual attunement and realization of the Infinite. The yogic practices make the life of the spirit real even to those who are incapable of insight. One marble statuette has the head, neck and body quite erect, and half-shut eyes fixed on the tip of the nose. Another is draped in the *upavita* fashion with a broad belt of cloth passing over the left shoulder and under his right arm. His shawl has rosettes having the form of the *bilva* leaf, the most sacred material for worship in the Śiva cult. The Nāga worshippers on each side of the deity referred to above are in a kneeling attitude, with their hands lifted up in prayer. Evidently their gods were not hidden aloft in the eternal snows or seized in the darkness of mountain defiles. They dwelt in the heart of man, which the false gods could not penetrate, and restored harmony in the soul. The philosophy of the age crystallized in the discipline known later as *brahmacharya*:[2] Sexual self-restraint is in

[1] *Taittirīya Saṁhitā* V. 3.

[2] See my *Indian culture*, Vol. I. Ch. 3, Sec. xx.

evidence in the *ūrdhva meḍhra* representation of Śiva on the seal. It is not phallic orgies but their conquest that constituted the essence of religion at the time. It is not without significance that the icon of the goddess (Fig. 18 of Pl. XII) has seven other goddesses standing below in a row. It is the theme of the *Chaṇḍī Saptaśatī* that the seven symbolize the conquest of the powers of the flesh—lust, anger, greed, pride, jealousy, infatuation and ignorance. The victory of the goddess was after these purified energies had entered into her spirit and she was single and entire.

The religion of the age then shows evidence already of the Indian genius in the direction of syncretism and synthesis, of sublimation and transvaluation of values. The icons described above give ample evidence of syncretism. It was by synthesis that Indian peoples of the time found a common pantheon. The gods were possibly independent tribal deities, as several gods in Vedic texts represent shades of the same physical phenomenon. The faces of deities are dissimilar at Mohenjo-daro, and are probably portraits of godlings or subordinate gods and goddesses. There was a beneficent Henotheism in India. Each community held its factor in the divine conception as that of the highest value, while tolerating and integrating the other factors. Thus the way was proved for a benevolent and comprehensive monotheism, as contrasted with the exclusive predominance of a God of gods in other religions. When men suffered from the torment of the unknown, they sought protection in Shamanism, an 'organized animism' associated with sorcery, magic and bodies of exorcists. Their religion as in Chaldea embodied the whole range of man's physical, natural and psychic sciences. But in India our magical incantations are only in the latest parts of the *Ṛg-Veda* and were canonized in the still later *Atharva-Veda*. Whatever their relative age as compared with the language of prayer and hymns to bright, friendly powers of nature, the latter had gained prominence already in the earliest ages known to us. Man had lifted his eyes to the beneficent, blue vault of heaven, and turned his searchlight inwards into his conscience and the inner recesses of the heart. He recognized the service of totemism in enabling savagery to abolish promiscuity and establish exogamy. There is hardly any evidence in our finds of orgiastic worship, indecent ugly symbols, bloody sacrifices, drunkenness and dancing to lewd songs. The bronze dancing girl rather represents an ancient form of religious prostitution, a safety-valve for society when it passed from polygamy to monogamy. Her face and limbs

express the realistic abandon characteristic of her class, but her expression is one of disdain and her eyes are half-closed (Plate XCIV, figures 6 to 8). But the dog and the pig in man die hard. Hence the conception of Śiva as *ūrdhva-retas*, the ideal of society in *upavīta* and *brahmacharya* —upholding chastity and continence as cardinal virtues. The passions hover about him, like wild animals baulked of their prey, but he is undisturbed in serenity and spiritual contemplation. Such emphasis on personal religion prevented mythology from corrupting and clouding the essential principles of religion, and its aspects, ethical and ontological.

SOUTH INDIAN CULTURE: ITS CONTRIBUTION TO INDIAN CIVILIZATION AND RELIGION

India extending from the Himalayas southwards into the sea may conveniently be regarded, for many purposes, in two parts, India proper or Hindustan and peninsular India. Of these two broad divisions, peninsular India has been recognized as geologically older, while Hindustan proper in comparison is more recent. The existence of man in consequence may be much earlier in the former than in the latter. Evidence of the existence of palæolithic man is extensive and widespread in peninsular India. The excavations at Adichanallur in the Tinnevelly District are clearly in favour of this conclusion. From the vestiges of palæolithic man we come to those of the neolithic by a comparatively long interval, which has led geologists and anthropologists to suspect that neolithic man in India may not have been the successor of the palæolithic, although there is no direct evidence to support a definite theory of separation between the one and the other. That there was a comparatively long interval may be accepted as a fact. From the neolithic to the pre-historic or proto-historic man, there seems to have been no positive evidence of a break of continuity. Hence we may take it that man was in existence here in South India from neolithic times continuously. It is generally admitted on evidence that neolithic man passed, in South India, from the use of polished stone to that of iron, while in the corresponding period in Northern India the transition seems to have been from stone to copper and later to iron. Since the introduction of iron, man has continued without any break in South India.

Coming to the historical period we find that the history of Indian civilization is complicated by the fact that the whole of modern Indian civilization is overwhelmingly Aryanized, and it has, therefore, become difficult to separate it from the older, although evidence has been accumulating to give a clear indication of a pre-existing civilization which had exercised important influence upon that of the Aryans, whose culture has ultimately taken possession of the whole of India, as in fact the other regions of the earth. The remains of palæolithic man are found in some quantity and tell their own tale. Similarly the remains of neolithic man are available in far larger abundance and distributed over centres widely apart, thereby indicating that, in the neolithic age, South India was fairly

occupied by man, and he has continued to be there ever since. The archæological remains that have come down to us do not give us any very clear idea of the particular ethnical group to which South Indian man can be ascribed. The problem is complicated to some extent by the loose use of the name Dravidian. 'Dravidian' is essentially a linguistic term and is used in regard to a group of languages. It is a well-known fact that people speaking a language are not necessarily of one and the same ethnical group, and therefore it would be misleading to speak of the Dravidians as though the term indicated a particular race of people. We have, however, to use it, since it has been brought into such use; but it may be borne in mind that it is not scientifically correct. The most recent anthropological investigations have failed to give us an idea of the character of the earliest inhabitant of Southern India. Whether he belonged to the Australian group or to the other well-known primitive groups of India, such as the Negrito, the process of mixing—miscegenation, as it is called—that has been going on, is so great that it would be difficult to discover from the present-day people the ethnical group which inhabited this region in the far off antiquity. It may however be taken that there were perhaps two groups of people, one civilized and the other much less so in the South, as in fact elsewhere also, the latter group still persisting in the various backward and unreclaimed groups of people that still inhabit India, while there was a group of a different character, which had attained a much higher degree of civilization. It is this group of Dravidian-speaking people that possibly constituted a distinct racial unit, and attained a comparatively high degree of civilization before the Aryan advent. When ultimately the Aryan immigration into South India did take place, many elements of the native civilization must have found entry into the civilization that ultimately developed into the Indian civilization of to-day. When, therefore, we speak of the contribution of South India to Indian culture, we mean those elements of civilization which got to be incorporated into the complex civilization of our times.

South India, the Far South as it may be called from the point of view of the cultural centre of Aryan India, was occupied during the period of history by Dravidian-speaking peoples, the most prominent among them being the Tamil-speaking portion possessing a literature which goes back to a comparatively old period, perhaps the oldest period among the Dravidian languages. When we say the oldest and speak of the age of Tamil literature, we are far, far way from the beginnings of

the race and its culture, and are actually dealing with an advanced people with all the elements of civilization that are the inevitable concomitants of a cultured race. It would be rather difficult to estimate when this culture began and what its early developments were. But we are able to understand and appreciate in full this culture embedded in its oldest literature, which takes us a considerable way back from modern times. The best period of this culture perhaps lies in the centuries on either side of the Christian era, and may roughly be marked off as extending from the beginning of the Mauryan age to the termination of the Andhra period of Indian history proper. Guiding ourselves purely from the information furnished by this body of literature, we find society organized somewhat in the following fashion. It did not consist of only one class or caste of people, as is sometimes asserted perhaps with more emotion than reason. The most important class of course consisted of those who were either directly engaged in the tilling of the soil or depended upon the soil indirectly. They constituted the main bulk of what might well be called South Indian society. Below them were various classes marked off already, being labourers, perhaps in agriculture which must have been then, as now, the most prominent industry. There were undoubtedly subsidiary industries such as weaving. It is doubtful whether a separate class of people was engaged in that industry; probably not. Other industries, such as that of the carpenter or the smith, were certainly the work of people specially set apart for them. Four groups of agricultural labourers (Kuḍis) are mentioned, who perhaps constituted the bulk of what have come down to us as the depressed classes of to-day: Pāṇan, Paṛaiyan, Tuḍiyan and Kaḍamban. All these were alike engaged as farmers, and are spoken of as the best of that class. We come upon stray references to other classes of people as well, a predatory class named Maḷavar, sometimes described as warriors also, who were accustomed to plant stones in token of those that died in fighting, and to celebrate festivals in their honour by eating and drinking a rice-brew as beer. They were otherwise a terrible pest of the highways, and are spoken of on one occasion as not even sparing the Brāhmaṇa going on an ambassadorial errand, whose person was generally regarded as sacred. There are references to other groups of people described as Nāgas, sea-going people or fishermen with various names—a class of people looked upon as of lower status in society, engaged in cutting and making ornaments of chank.

In a society so formed, the Brāhmaṇa came in as an immigrant. He naturally kept aloof from the rest of people and soon secured for himself a much respected position of sublimity, chiefly acquired by his character and learning, and was looked upon as a benefactor of society through painstaking labour of his own. When later people began to describe the society formally, they made the specific reference that South Indian society was composed of the Brāhmaṇa and only one other class—the Śūdra, the intervening two classes being regarded as not having been there. This is notwithstanding the fact that in certain classes of literature we still find the rulers assimilating themselves to and actively associating their dynastic names with those of the well-known Sūryavaṁśa and Chandravaṁśa of the Aryan classification. In spite of the absence of these, society is described as falling into the same kind of an organization as the Aryan North, and in this case it is frankly said, by those responsible for classifying, that the four classes or *varṇas* were unknown in this region. But still society may be regarded as having been constituted like that of Aryan India by throwing the one class of people into groups according to their occupations. That is how they get to be divided. While elsewhere we find that the select families who became rulers of extensive areas and came to be regarded as kings are still considered as belonging to the same class as the whole of the inhabitants engaged in agriculture. The main core of society with which we began is described in two groups, those that plough the land and cultivate it constituting the large bulk, and those that get others to do it for their own benefit, a comparatively small select class. From among the latter came the kingly families who were permitted to take girls from the other class in marriage and not give girls in return, a principle well-known to Aryan society. We have nowhere a full account of the various divisions or sections into which society was actually divided, but from incidental references we can gather this. Land-owners and agriculturists, who may be said to belong to the same ethnical group, were followed by the other groups including the hunter-folk as a separate group. So there would be the various classes of agricultural labourers so-called, the Nāgas perhaps with various occupations, the fisher-folk, the hunter-folk who might perhaps be equated with the Maḷavar, though they are sometimes described as a separate class, the Maḷavar with the two occupations of hunting and robbing on the highway, down to chank-cutters and professional people like that. We are able to see here the rudiments of the caste system as it obtains in India to-day, as distinct

from the familiar *varṇāśrama* of Aryan society, which seems almost to presuppose one ethnic group falling into four classes by one division and being divided into four sections on the principle of various stages of life. This last, the *āśrama*, was applied only to the Brāhmaṇa group, and as far as known instances go, the Kshatriya as a caste seems to have come into it also; but instances of the other two classes in the third and fourth *āśramas*—the life of the hermit and the monk—are not met with so often. The other Aryan division was professedly on the basis of colour, not necessarily actual physical colour, though the remote origin may have been that, as represented by particular colours.

The various classes seem to have lived a life of their own as distinct from that of the others. Each had its own occupation to engage in, certain well-known privileges to enjoy, and otherwise interfered but little in the similar life of other classes. In the matter of interdining and intermarriage, each group seems to have had its own rules or practices. There is no evidence of any effort at the imposing of customs and habits from above, or of demands for assimilation from below. Such assimilation as there was—and there has been a considerable amount of it—came as a result of good example set by people for whose learning and conduct of life there was a certain amount of general respect.

Apart from agriculture, the other occupations known are cattle-rearing, weaving, fishing for pearls and chank and working in the latter, trade and commerce. Cattle-rearing seems to have been the occupation of a class distinct from the agriculturists. The latter had to maintain a certain number of herds of cattle for their own purposes; but this was only subsidiary to agriculture. Cattle, generally cows and sheep, with a few additions among which the horse is conspicuous by its absence, were reared by a distinct class, taken out generally to hill-slopes for purposes of grazing in seasons of agriculture, and brought back to village settlements only in the off seasons. It is the dairy produce that was of value, but herds of cattle were also prized sometimes for supplying valuable manure. The occupation of weaving was mostly in cotton, and the weaving was of fine counts as well as the ordinary ones. The South Indian weaver's fame for muslin-weaving seems to have been well established as far back as the beginning of the Christian era. Some kinds of cotton stuff are said to have been so fine that they were spoken of as a web of woven wind or the vapour of boiling milk. In regard to metal, it has already been stated that iron was known. Gold was available in plenty as being carried down by the sands of the river Kaveri. It is this

feature that gave the name Ponni to the river, a name familiar and much affected in literature. But the people seem to have gone beyond collecting gold from sands. We come across references to gold veins being seen on the surface in the rocks of the Western Ghats. There probably was mining of gold, as old workings of a distant age have been discovered in South India by geologists. Salt undoubtedly was manufactured, but there is no reference to common salt being mined. Copper seems to have been known early, as we come upon references to comparatively fine sheets of copper engraved with representations of sylvan and other scenes. Inlay work in ivory is also referred to in the same context. The occupation of fishing seems to have been largely prevalent. There seems to have been a special class of people engaged in it. Apart from fresh water fishing for edible fish, fishing seems to have been an occupation among the coast people principally for pearl, chank and coral, all of which find mention. There are also indubitable references to their being finely worked into various articles of value, and therefore they may be regarded as commercial products and must have been manufactured as such. Fish-curing seems to have been known, and cured fish was again an article of trade.

There seems to have been a considerable volume of internal trade, which probably was generally by barter. Perhaps we may not be warranted in stating that coins were unknown, though extensive use of Roman coins, when overseas trade developed to the extent of large exports to the Roman Empire, might warrant that inference. There must have been other mediums of exchange, because overseas trade seems to have been common, and there are unmistakable references to Indian shipping going great distances and importing various commodities from the East as far as the coastal frontiers of the Chinese Empire. The whole of this could not have been on the principle of barter. In regard to internal trade, barter seems to have been the usual method, as we have a graphic description of salt-laden carts trudging along the trunk roads from the coast almost across the peninsula, returning after selling away all the salt, but laden with the articles obtained in exchange, the principal of which seems to have been paddy; but other much prized commodities, such as even some of the spices of the Western Ghats, seem to have formed part of them. Articles of export seem to have comprised agricultural products of India as now, pearls, products from mines such as gold and precious gems like beryl and diamond, valuable wood like sandalwood, a product of the country, and aloes-wood

imported from elsewhere, cotton goods, particularly the finer muslins, and much else that could be mentioned. The volume of trade seems to have been so great as to absorb more than half the eastern import trade of the Roman Empire, and involved the importation of coin and specie to a large amount. The information that is gained from Roman and Greek writers is confirmed by the Tamil poems of the age, which describe graphically ships of foreigners coming up the river, bringing gold for payment and carrying away instead pepper and spices, the products of the Western Ghats. This reference is in particular to the western port of Kranganur, up the creek of which Yavana ships (probably foreign ships of any description, not necessarily Greek) sailed for articles of value, carrying quantities of gold, probably gold coin for payment in return. Such extensive commerce is evidence of a prosperous country with a teeming population under a fairly well ordered government, giving assurance of the degree of peace which is the absolute pre-requisite of a flourishing commerce. The population must have consisted of different classes and castes of people, as the Indian population has always been. There is no indication in any of the available sources, indigenous or foreign, of any disorder worth mentioning in society. Life seems to have been orderly and peaceful, and people seem to have enjoyed plenty generally. Times of distress were not unknown, but were tided over by human effort, as we have some few references to continuous famines, which brought about devastation in the country.

In regard to religion and social life, people seem to have realized the fundamental and characteristic differences and had from the beginning reconciled themselves to the idea of 'live and let live' generally. Religious fanaticism leading to disturbances seems to have been absent, though religious convictions of people and the forms of worship varied from the planting of stones to the dead and the prosecution of worship by festivals in which drinking, dancing and amusements of that kind entered largely at one end, to various other forms culminating in the refinements of Vedic philosophy and religion at the other. There were apparently many different forms of worship between these two extremes, and the worshippers seem to have conducted themselves in a spirit of complete tolerance. In this body of literature, we already have references to Śiva, more or less associated with the aspect of destruction, as in later times. Vishṇu and Vishṇu-worship were already known, as Baladeva and Kṛishṇa are referred to separately as two distinct beings

to be worshipped. There is a similar reference to Subrahmaṇya, as he is called in the South, the Skanda or Kārttikeya of the North. These four are described as the main or principal gods of worship as distinct from a number of minor deities, worshipped each in its own particular way.

This civilization, a mere outline of which is all that could be given above, prevailed in the Tamil country, which for that period may have extended as far north as the Krishna, practically along the east coast from where the river Tungabhadra meets it, and we may have to follow the course of the Tungabhadra straight westwards to the coast. To be more accurate, the line has to be drawn a little less than a degree to the south of this on the eastern side. The earliest sites where this civilization flourished are the three famous capitals and a few sea-ports corresponding to them. At the dawn of the Christian era, therefore, Kāñchī, the modern Conjeeveram, would be one centre with Mahabalipuram perhaps as its port. South of it Uraiyur, the capital of the Chola country, near Trichinopoly, and a great overseas trade centre like Kaveripatam at the mouth of the river Kaveri, would be others. For the Pāṇḍya country of Madura, a port of the south-east somewhere near the present Tuticorin, and along the west coast, Kranganur at the head of a creek—perhaps a port—and the capital itself were centres of this culture.

In this period, which may perhaps be regarded as the golden age of Tamil culture, we already find much evidence of contact with the North. We see the Aryan Brāhmaṇa in the Tamil country in an established position at the head of society, and, outside of it, much respected and looked up to for various purposes. How far back we should go for the beginnings of this contact is not so easy to settle from the material before us. We may have to go a few centuries earlier, but there can be no manner of doubt that the influence of Aryan culture was in full swing already in the period of Aśoka. In the age to which belong classical works of Tamil, generally called Saṅgam works, apart from the general evidence of Aryan and Sanskrit influences, there is evidence of the immigrant Jainism and even of Buddhism, although in the days of Aśoka this region was known as being outside the boundaries of the Mauryan empire. Notwithstanding the existence of the fearsome forest-region in the Deccan extending from the Krishna northwards at least to near the northern borders of the Nizam's Dominions, there seems to have been a roadway along the west coast, perhaps the easier

one, and another along the east coast as well. The evidence of this southern immigration is confirmed by the odds and ends of information that we get about South India in Sanskrit literature. Therefore we may take it that there was a considerable opportunity for contact between the two cultures, and consequently there is much evidence of this cultural contact in the literature itself. This contact with the alien Aryan culture of the North seems to have had the effect of quickening the growth of Dravidian culture as a whole, but the influence is more visible in the development of Tamil literature. It is this contact really that gives character to the development of southern culture even within the fold of Sanskrit literature, the impress of which could be seen even at this distance of time. The influence has been mutual, and notwithstanding its recondite character, there is much even in Sanskrit culture which is traceable to this Dravidian contact. It would, however, be difficult to trace what is Dravidian and what is Aryan in the complex thing that goes by the name of Hindu culture in South India. We shall nevertheless make an attempt to trace this mutual influence as far as we may with the means at our disposal.

Aryan penetration through the double frontier of the Vindhya Mountains and the Narmada is generally regarded as having taken place as early as the days of the *Aitareya Brāhmaṇa*, about 800 B.C. Having regard to the character of this immigration, it could not have been a rapid process, nor could it have taken place at one step. One hears of kingdoms like Vidarbha and Aśmaka in the far north. Beyond that, the way of easy advance into the South seems to have been blocked by the forest-region of Daṇḍaka. While we could trace Aryan settlements round this forest country on the north and west, the advance must have been comparatively slow farther southwards, as the principal line of advance seems to have been along the west coast. Our knowledge of this southern region, as gathered from Pāṇini (7th century B.C.), is comparatively slender; it grows considerably when we come to the date of Kātyāyana (about 300 B.C.); but it is much fuller and includes the far South at the time of Patañjali, *i.e.* about the middle of the second century B.C., as references to Kāñchi already as a *ghaṭika* (a settlement of learned Brāhmaṇas) and to Kerala give an idea of the extent. The *Arthaśāstra* has a number of references, of which Pāṇḍyakavāṭaka, referring to a class of pearls, would take us to the extreme South, although the date of the book is still a matter for discussion. We may, therefore, take it that Aryan India had a considerable knowledge



AGASTYA

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of the South by the time we come to the age of Aśoka who refers in his edicts to the South in terms that imply a definite knowledge of the political divisions of this far off region. In the 13th Rock Edict Aśoka speaks of his dominions almost in three compartments: Northern India, the part which constituted the empire proper, followed along its southern frontier by a wall of dependent States, next followed by States which were on his frontiers and independent of his authority. Of these last he certainly refers to the well-known kingdoms of the South beginning with the Chola, which then seems to have been the nearest to his frontier. Then follows the Pāṇḍya, and next what he calls Keralaputra, followed by a kingdom, not yet identified beyond dispute, known as Satiyaputra. This exhibits a considerable knowledge of the South, and Aśoka's official informants must have had a fairly accurate knowledge of the political divisions of Southern India. What is more, he makes the statement that these southern kings were his neighbours, and his efforts at the propagation of the good life into this region had to be through the support of the rulers, who are placed on a footing similar to those of the five (Yavana or Greek) kings of the West, among whom he mentions the five who succeeded to the empire of Alexander, forming at the time five separate kingdoms. We may, therefore, take it that Buddhism had penetrated into this region peacefully, and there were Buddhists already in the land of the Tamils. We come upon a few references in the Tamil classics of the Saṅgam age, where there are unmistakable references to the Jains specifically. We may take it, therefore, that where the Puṟanāṉūṟu poem illustrative of "the victorious Brāhmaṇa" (*Pārppana-vāhai*) refers to his success in disputation over the followers of other religions resembling the Vaidika, the reference seems principally to be to these Protestant systems in relation to the Brāhmaṇism of those days. So in spite of the comparatively meagre information we have of the Aryan advent into the South, there is little doubt that it is the votaries of Sanskritic culture, Brāhmin, Buddhist and Jain, that came in and made settlements in this region. They could live peacefully and pursue their religious practices unmolested by the people, apart from whom, though as forming part of their society, they managed to live. Such influence as they exercised upon Tamil society was the influence more of example than of compulsion by authority. There may have been persuasion by teaching, but, from what we are able to glean, the teaching seems to have been restricted to those who sought it and were

prepared to render their services to the teacher and lead the life which it involved. It could have been at the very best in respect of a comparatively small number. But the influence of a good life and the example that it set up produced changes gradually, which after a period of time amounted perhaps to complete revolution in ideas. We have indication of this in various references, direct and indirect, in this body of literature.

Apart from secular life, the development of ideas and the throwing out of institutions in giving effect to these ideas show an equally clear reorganization of society, which, while it takes note of the existing state of things in the new surroundings, would still make an effort to assimilate two systems to one other. As one example we may cite that, in the matter of *varṇāśrama-dharma* as it was known among the Aryans, there was nothing in Tamil society corresponding to either *varṇa* or *āśrama*, though we may not be justified in saying that it had no such distinction at all. The difference of *varṇa* or colour, physical colour, there certainly might have been, having regard to the different sections of people to whom we get references in this body of literature. In regard to the *āśrama* (stages of life), there do not appear to have been analogous arrangements to all the four *āśramas*, as there were none to correspond to the four castes. It would, however, be too much to say that there was nothing in the Tamil society to answer to the ascetic life of the last *āśrama*. Of course the bulk of the people were householders in the one society as in the other. The contrast, therefore, would not be very great, and if systematizers built on the obvious analogies, imperfect though they may have been, the effort at assimilation would naturally bring into vogue something like the Aryan system of *varṇāśrama*. But the caste system as we understand it in modern times goes deeper, and the divisions among the people seem to have been almost as fundamental in South India as in the Aryan land of the North. The differences were based on ethnical distinctions, and the different groups were allowed to live side by side without any forceful attempt at unification, as such might have seemed well-nigh impossible of achievement. To assure that there was no caste system in South India would hardly be justified by the facts of the case, and even on the basis of available authority what really is required in discussing the subject is that we ought carefully to distinguish between the significance of the Indo-Aryan *varṇāśrama-dharma*, and the Indian caste system as it has all along been.

From the earliest times, social organization seems to some extent to have depended upon, or at any rate, been greatly influenced by the practice of religion. Particular forms of belief, and specially developed forms of worship, make for separate groupings and give to the groups a more pronounced individuality. Therefore to the complicated groups that already existed a new principle of grouping was added. By the very nature of the case, they had to live and let live, and those that were responsible for the maintenance of order in society had to see to it that the principle of mutual toleration was followed to the fullest extent. The divisions, therefore, flourished unmolested by the existence of other divisions, and each group made its progress according to its opportunities, not unaffected by the other groups in whose midst it had to live, but free from any pressure by a fiat of authority or otherwise. So the Buddhist lived his life unmolested by others, as did the Jain as also the Brāhmaṇa, while the body of society was influenced by all those alike imperceptibly. The one or the other of these varying systems could attain a position of influence according as the main body of society professed that. The particular persuasion that the rulers followed had considerable influence upon society, but it was not that of compulsion by authority, or even pressure of number. So in point of religion, South Indian society enjoyed freedom, and South Indian rulers were as content as their northern neighbours with playing the part of a garden-watch, who lets all the garden-produce grow in it unmolested by the external destructive agents—regulating, as far as possible, that one part of it or one group of society did not grow up to be a disturbing factor to the others. In a state of society where the votaries of different religions, whatever their convictions, are confined to increasing their clientele only by subtle influences and by open preaching or persuasion, the influence from the elect gets naturally a great deal modified by the established practices and even the existing convictions of the vast body of society, so that development in religion indicates a gradual change, the resultant of the two conjoining influences. Important features creep into the general system, which may have originally been the practice of the mass of the population as well as that of the select group whose influence gets to dominate society comparatively early. We seem almost to see that the Aryan system was in South India the fire-cult that is found to have been in the North—the cult which finds its fullest description in the Brāhmaṇas. But that does not exclude the existence simultaneously of either the inquiring spirit or speculation,

both of which we find in the Upanishads. In the very Upanishads we seem to discover two lines of thought—one advancing from an exacting life of ritualistic performances gradually to a higher system of thought, culminating in the attainment of salvation. This implies in the first part of it the keeping of the sacred fire, and the Brāhmaṇa is given a special character as one that maintains the fire and benefits society by the consequent timely bringing in of rain. Side by side with this there seems to have been a system which looked upon these devotions to the complicated ritual of fire oblations of various kinds as being unnecessary, if not useless, and the transferring of emphasis from that to the good life, as in the case of the Buddhist and the Jain, or to a life of devotion to a personal God and service to Him in forms which would make the intervention of the sacrificial ritual superfluous.

This last feature of devotional religion, or *bhakti*, seems to reach back to times anterior to the Aryan advent. Mention has already been made of early references to the four gods, who have the special duty of protection of the universe: 'Śiva-Nīlakaṇṭha,' equated with the god of death or destruction; then 'the White One of the ploughshare and the palmyra flag,' generally equated with Baladeva or Balarāma, the elder brother of Kṛishṇa; the next is 'the Blue One with the eagle (Garuḍa) flag', identifiable with Vishṇu or more specifically Kṛishṇa, as in this class of literature generally; and lastly, 'the Rider on the Elephant with the flag of the peacock,' identified with Skanda, generally named in Tamil Muruha, often referred to in Tamil otherwise as Piḷḷaiyār the son, or prince. These are described as gods previous to time, which, according to the Tamils, is the peculiar feature of the notion of a god, in Tamil 'unlimited by time.' These are found mentioned in a poem by Nakkirar in an effort to describe a Chera chief and his extraordinary power. The manner of the description of these would give the appearance of these being peculiarly Tamil gods, notwithstanding the features that make them identical with the Aryan gods with whom they are actually equated—not merely in this particular poem, but in others of this age where the description is much more elaborate and the details given show more conclusively that they are actually the Aryan gods. While admitting the undoubted equation, the question would arise whether the ideas underlying the notion are not traceable to times previous. Devotion to other gods and deities so far as they appear in this body of literature seems to lend colour to an underlying general notion of supernatural beings, good and bad, intervening in man's affairs for

good or for evil, and capable of being propitiated into giving relief or doing positive good. This seems to be more or less the religious outlook and the general view of the relation between man and god. There is evidence of such a kind of notion in the artifacts discovered in the excavations at Mohenjo-daro, where articles bearing witness to worship of various kinds have been unearthed. The worship of trees and of various other forms of the supernatural, and even representations more or less resembling Śiva or Rudra in certain aspects, seem to be in evidence in representations on seals and other talismanic objects. So the general idea of a supernatural being capable of doing great harm, and, if propitiated in due form, equally capable of great beneficence, seems to have been at the root of early religious notions of the more civilized inhabitants of India from time immemorial. The description of those who opposed Aryan advance in the Veda seems to tally with this general notion of the religious culture of the people already inhabiting India over vast areas. While, therefore, devotion to a deity and propitiation for inducing his goodwill for humanity seems to have been fundamental alike to Aryan as well as non-Aryan systems, the method of propitiation, however, seems to have differed, and, in the last resort and in its ultimate development, the difference of method seems to have persisted, while the fundamental principle seems to have undergone a process of assimilation. Brāhmaṇism itself seems to have undergone modification when it had to meet the religious needs of a wider clientele than a comparatively small and compact community of the Brāhmaṇa alone or even of the Aryans. In this transformation, the uncompromising insistence upon the correct performance of the elaborate rituals of sacrifices seems more or less relaxed for others than the elect, and alternative courses of a much less exacting character are suggested for the attainment of ultimate salvation—a salvation no less valuable than that attainable otherwise, but gradually rising in importance till it came even to be asserted as even more efficacious than the other. This alternative course partakes largely of the character of the practices which obtained acceptance and were widely in vogue in later times. It is this gradual rise into importance of the notion of a personal God, and the devotion and service of individuals to Him as a means of attaining salvation by grace, that transforms the Brāhmaṇism of old into the Hinduism of modern times. It is a development in Brāhmaṇism analogous in character to the transformation of the teaching of the Buddha, the basic principle of which is the attainment of *nirvāṇa* for oneself and by one's own

exertions, subsequently widened into the doctrine of saving and service which changed the individualistic Buddhism (Hīnayāna) of the founder into the service of humanity (Mahāyānism) of later times. A similar, though subtler, change could be noticed even in Jainism. In all cases the cause of the change is the expansion of the religion to take in a wider and more varied concourse of people into its fold and provide for their religious needs. While, therefore, the doctrine of *bhakti* as formulated in these various schools took the form of actual Aryan teaching, the underlying principle and even the general method may reach back to far earlier times, and even to a more primitive state of society. Hence perhaps it is that later writers, even Paurāṇika writers, give to South India the credit of inaugurating the form of religion in which the dominating principle is a personal God interested in human welfare, and devotion to Him by prayer and service of various kinds. In fact this *bhakti* is said to have originated in the Draviḍa country, passing from there into the Marāṭhā country, and from there ultimately to the Gangetic Doab round the region of Muttra, overspreading the whole of Hindustan from that as the centre. That is the description found in the *Padma Purāṇa*, and, not without mention perhaps elsewhere, may be said to be fairly true, historically, of Vaishṇavism and its outspread, though in regard to the other school of Hinduism, *i.e.* Śaivism, the features of this development are not so clearly marked. But in both alike, there has been unmistakable interchange of ideas from time to time between the North and South, making a clear demarcation of origins a matter of considerable difficulty. So much, however, is clear that in the centuries following the age reflected in the so-called Saṅgam literature, there is in South India a definite and rapid development of the more devotionalistic systems of Vaishṇavism and Śaivism, the two prominent forms of modern Hinduism.

Politically the age is coincident with the ascendancy of the Pallavas ruling from Kāñchī, already famous as a great seat of Brāhmaṇical learning. The peculiar culture of the Pallavas, as far as we could distinguish it, seems to have been northern to begin with, and it is this very direct contact of the North and South that seems to have been fruitful in the production alike of the great votaries of the religion of *bhakti*, and consequently the great efflorescence of *bhakti* literature, both of the Vaishṇavas and of the Śaivas. The *Tevāram* and the *Tiruvāchakam* of the Śaivas, and the *Prabandham* literature of the Āḷvārs of the Vaishṇavas alike belong to this age. So in South India, the period of

Pallava dominance politically is the age pre-eminently of the school of *bhakti* and of the transference of Brāhmaṇism into the Hinduism of the Vaishṇava and Śaiva of later times. This age is remarkable for the change to the modern of even Tamil literature pure and simple. The old classical literature called the Saṇgam literature gives place, as it were, to the more modern forms of it. The works of Māṇikkavāchakar, the works of the *Tevāram* hymners and their followers, the writings of the Āḻvārs are all of a class. There are other works besides, which in their form and character are similar to them. The *Tirumandiram* of Tirumūlar also falls into that class. Apart from the religious literature, prominent examples of secular literature could also be mentioned. Works like the *Pāṇḍi-Kovai* recently brought to notice, Perundevanar's *Bhāratavenbā* and *Nandikalambaham* of about the same age are shining examples. There may have been many more, which have not come to our notice. The full efflorescence of this class of literature belongs to the period commencing from the fourth century after Christ. The religious literature referred to above in both sections, Vaishṇavism and Śaivism alike, gives evidence of the development of the Āgamas which lie at the root of temple-worship, which is a direct product of the religion of the *bhakti* school. Once the recognition of a personal God becomes a cardinal point of religion, and along with it a congregational worship, forms of worship and their norms would come into existence, and prescriptions for both would be the necessary product of any systematization that might follow as a consequence. The deity in the abstract has first to be conceived of in some form suitable for intervention in human affairs. The mental conception perhaps has to be transformed into physical forms for the uninitiated, and houses of worship should be built and provided for these to attract the votaries to go there and worship in common. Therefore the whole of Āgama literature, whether it be Śaiva or Vaishṇava, which came into existence to fulfil this need is ascribable to this age. Temple-worship becomes the prominent feature of religion. Temples have to be constructed, and God has to be installed in them in the shape of images of various kinds, and worship prescribed in forms suitable to the conception of the deity in regard to them. Works bearing on these Āgamas, both Vaishṇava and Śaiva, count up to more than 120. The principal ones among these surely go back to the commencement of this period, and authority for them could be found, going back to far anterior times, in Vedic literature itself. There again the question would arise how much of this is really

Vedic in character and what is un-Vedic. It would be a matter of great difficulty to separate the elements and distinguish the two. Without going into the minutiæ of the question it may fairly be stated that this is about as much of a compound of the Pre-Aryan and the Aryan as anything else. The Aryanization may be regarded as essentially a process of adaptation, as some of the elements were of course peculiarly of Aryan character. Some of them are equally distinctly traceable to times pre-Aryan. This can be done more or less readily in respect of South India, but, for this particular period, an equally clear division in respect of the North would be perhaps more difficult.

All this period of the development of Hinduism was also a period of a more or less similar development and activity in the other religions of the land, Jainism and Buddhism. There is evidence of much contention and disputation, of which there is considerable evidence. The State and its ruler were early regarded as something distinct, and whatever the personal persuasion of the ruler, his individual religion was not elevated to the position of a State religion. This position gave no occasion for any attempt at unity, or even uniformity in point of religion, and this removed one of the fruitful causes of persecution. Such squabbles on the score of religion as there were, were only contentions between individuals and groups of individuals generally, and rulers of States generally occupied the position of eminent judges, whose position at the head of society demanded their maintaining order and preventing these squabbles from growing into social disturbances of any magnitude. There were, however, occasions and periods when one of the contending religions received sufficient encouragement to achieve an ascendancy which worked itself out more by influence than by actual acts of proselytism or compulsion in matters of conviction. Though one can quote occasional instances of what may seem persecution in the cause of religion, even in such cases it will be found on ultimate analysis that it was not persecution in the sense of people being subjected to public pressure and oppression for their convictions as an act of State. Much rather it happened to be the unreasonable acts of individuals and groups of people, some of them holding high positions. Therefore in the ages when India was under Hindu rule, each group of people was allowed freedom of its own course in respect of its religious development, provided it was pursued so as not to clash with other similar groups. This liberalism of view pervaded all public life, as it were, and showed itself in various departments of human activity. Rulers adopted the same



GOPURAM OF MINAKSHI TEMPLE AT MADURA

Photo: Bourne & Shepherd.



PILLARS, RANGANATHA TEMPLE, SRIRANGAM

Photo: Bourne & Shepherd

principle even in matters of administration, and this period proved to be a period of development of local administrative institutions, which came ultimately to provide a popular self-governing agency that regulated social and public life to such a large extent that it made the work of government from a particular centre less onerous and more satisfactory. Such central government as existed busied itself actively in the field of ordinary administration, in the work of regulation and supervision, the actual work of direct administration being carried on by the people themselves. This system reached its culmination in the period immediately following. We have ample material, more or less recently brought to light, from which it would be possible to construct a fairly full picture of the system of administration as it obtained nearly from the tenth to the fifteenth century. The administrative system that obtained is a reflection of the general activities of the society as a whole. From the point of view of general culture, therefore, the period may be regarded as one of great development. Religion coming in for a similar course of constructive treatment, we find at the end of the period religion well defined and organized in particular forms for devotion and practical worship by particular groups. Where an effort at systematization takes place, the very act of definition introduces a certain amount of narrowness, and this shows itself in the features of sectarianism that follow. Each group advances its position and holds itself as distinct from the surrounding groups and sets up a practice of its own in matters of religion; but happily, notwithstanding the stiffness of the division that sectarianism introduced, there seems to have been sufficient fellow-feeling among the people generally for the common interests of society to hold religious sectarianism in control at the point where it might interfere with the common good of society. To a great extent this feature may be ascribed to the maintenance of a government alive to the need of peace among the groups for normal development, and to its insistence upon peaceful pursuit even of religious convictions. On the whole society seems to have been making great progress, and the social organization itself took the form of an organization for assured peace. Provision was made for the growth of prosperity, and facilities existed for the development of commerce and wealth. The ground was thus well laid for the coming in of a more general or imperial organization which would bring under one control a vast extent of country with but imperfectly and inadequately developed means of communication, compared with those of modern times. Hence the three or four centuries following this happened

to be a period of the Chola Empire, which occupied all the plain portion of peninsular India, the plateau portion in its turn being held by a more or less similarly organized political power, and the contention between these two great organizations forms a feature of this period. These were often at war, and there was a considerable amount of destruction that war naturally produced. But there again the dominating notion that the inevitable evil should be confined within narrow limits prevailed. While armies passed up and down in the course of invasions and counter-invasions, the work of destruction was confined to a minimum, there being well understood regulations imposing limits upon the destruction of person and property. This paved the way for the organization of the Vijayanagar Empire, which marks the grand climacteric of Hindu organization on a comparatively wide scale, that prevented the onrush of the alien civilization of the Muhammadans, thus saving South India from the thorough revolution, both in material and moral life, of the people of this region as a whole. This Empire maintained its position as guardian of the South for more than three centuries and conserved Hindu civilization in its normal natural growth.

Āgamic Śaivism and Āgamic Vaishṇavism are already in clear evidence in the writings of the Āḷvārs and of the Aḍiyārs, which go into much detail in regard to forms of images and their modes of worship. In the course of this reorganization of Brāhmaṇism, the need for controverting the rival faiths of Buddhism and Jainism would be necessary, the more so, if either or both of them happened to occupy a position of influence in society because of a large clientele or of influential patronage. We can easily point to the existence of either, and one feature of this rising influence at least of Jainism clearly had the result of fostering the growth of literature both Sanskrit and vernacular, as in the case of the Hindu development. The periods of their prominence differed slightly, but the course of their progress is similar. In the literature of the period we hear unmistakably of the contentions and squabbles of the sects of which the Buddha himself is said to have complained at the outset of his career as a teacher. These often take the form of challenge and counter-challenge, which sometimes assume uncompromising forms, and this has been laid hold of as evidence of persecution in the cause of religion. The challenge generally took the form of an invitation to controvert fundamental principles of religion, sometimes even of simple argumentation, the party defeated undertaking normally either to become

a convert or to cut off his head. Very often it was a challenge of individuals; sometimes it happened to be a challenge between groups. As far as the evidence goes, whatever these people might have done left to themselves, they were not so left by the rulers, who saw to it that the extreme penalty was not exacted. While, therefore, we might come upon loud statements of deadly challenge, the evidence in a few prominent cases makes it clear that these were not allowed to be worked out to the extreme consequence. But from this contention of religion there sprang up the need for definition and regular categorical logical statements of tenets on the one side, and provided the means on the other for the regular formation of what might well be described as a sectarian religion. At the end of the period we are in the full tide of sectarianism of one form or another. In the course of this the need was felt for comparative studies to seek authority in support of doctrines, and for setting them out in a form ready to be put forward to be challenged and proved. The course of this formulation is already clearly in evidence in the works of the Aḍiyārs and the Āḷvārs. One feature which the Vaishṇava literature developed peculiarly is the systematic effort at reconciliation of the teachings of the Vedic religion with those of the Āḷvārs—the *bhaktas par excellence*. This was the case with the *Prabandham* as a whole, and the *Tiruvāymoḷi* of Nammāḷvār was regarded as the rendering of the Veda itself in Tamil, so that the edge was removed altogether in the antithesis between the two. This particular Āḷvār came to be praised by great writers of Tamil as one that had done the Vedas into Tamil. What was more important than this is a publication of a series of elaborate commentaries, *Vyākhyānas* as they are called, writings in a language compounded of Sanskrit and Tamil, and constituting a special class of Maṇipravāḷam literature. This class of works, which in their present form belonged to the period following the lifetime of the great Vaishṇava teacher Rāmānuja, is already in germ during that period. This spirit of compromise led the Vaishṇava Brāhmaṇa and the non-Brāhmaṇa alike to work together to a great extent. In respect of Śaiva literature the antithesis remained, and the teachings of Śaṅkara and those of the Aḍiyārs had to pursue each its course separately. This, combined with the radically different character of the teachings, made the antagonism more and more acute instead of being bridged over, as in the other case. In the Śaiva sects, therefore, the object of their anathema has become the Advaitin, and extreme Śaivism looks upon the Vaishṇava sects with far greater forbearance; nay more, it would recognize them

as efficacious groups for attaining salvation, only one degree less so than the particular form Śaivism would recommend. This course of development led to the formation of tenets and of sects, and from the commencement of the thirteenth century onwards religious disputes came to be common not so much between the rival systems of Hinduism on the one side and Jainism and Buddhism on the other as among the rival sects themselves, particularly between the sects of Vaishṇavism and Śaivism. The general body of these worked together to a considerable extent, but the extreme sects in either proved much more uncompromising.

It was in the course of this kind of religious development that the Muhammadan invasion broke in with all the confusion that it brought in its train. The iconoclastic tendencies of the early Muhammadan invaders made North India no longer the peaceful home for the safe pursuit of Brāhmaṇism. There seems to have been a considerable influx of Brāhmins southwards, bringing with them certain peculiar developments of Brāhmaṇism as then practised in Northern India. The general change that came over the South seems equally to have come over the North as well; and in a particular stage of this development Tāntrikism, which may be regarded as somewhat of a debased form of Śāktaism, which again is only a rigorous form of one aspect of Śaivism, developed the worship of a Supreme Goddess in one form or another. There has been a corresponding development in the South as well of the Pāśupata and Kāpālika sects, whose successors are also heard of as being more or less votaries of a more rigorous form of Śaivism. The culmination of this form of Śaivism is what became Vīra-Śaivism, of which there seems to have been two varieties, a milder and a more austere one. But even the austere form here did not develop the features peculiar to Tāntrikism. In the form they attained in the eleventh century, the teachings of the *bhakti* School seem to have attained so wide an acceptibility that they passed beyond the limits of South India into the Deccan and Northern India, as summarized in general terms in the *Padma Purāṇa*, and they developed their own particular forms in both these places. The Vīra-Śaivam (Liṅgāyatism) is a development which had its most popular field in the Deccan. Vaishṇavism passed from the South and centred round Pandharpur in the Marāṭhā country, and found a convenient centre in the region of Muttra, hallowed as the birthplace of Kṛishṇa. In the period immediately following the Muhammadan invasions, when the clang of arms gave place to a more settled administration even of the foreigners, the sects developed more definitely in the face of the new

enemy—Islamism. Rāmānanda and his followers carried on their teachings so successfully that in the age from the twelfth to the fifteenth century the sects of the *bhakti* School took the form of the Vaishṇava sects in Northern India with peculiar devotion to two *avatāras* of Vishṇu, Rāma and Kṛishṇa. Rāma retained his hold chiefly through the famous Hindi *Rāmāyaṇa* of Tulasidas in Hindustan proper. Kṛishṇa exercised greater fascination both in Gujarat under Vallabhāchārya, and in Bengal under Chaitanya, as in fact to a large extent in the Marāṭhā country as well. But the extreme form a Vaishṇavism may be held to have culminated in the teachings of Guru Nānak, and its later development in the modern Sikhism.

One special feature of Sikhism, as in fact of other similar systems of latter-day Hinduism, is the special inhibition against idolatry as it is usually called. All these lay special emphasis upon the uselessness of the worship of idols, which is only one particular form of a general objection to what is generally called Āgamic temple-worship. This objection to worship in temples under the regular system prescribed by the various Āgamas assumed importance at a particular period of religious development in South India as well, and it marks the period when this worship reached its highest development and called for a natural reaction from those reforming spirits who protested against its necessary limitations and exclusions. The chief exponents of this protest came to be called Siddhas, who laid emphasis upon personal religion of the Yogic kind as of the highest importance, and naturally when that idea gained vogue, temple-worship and all that it involved became superfluous. The movement in this direction goes back to pretty early times, and there were people who protested against the great importance that was being attached to forms of worship, as it were. Passages could be quoted from such an early writer as Tirumūlar, but this sect grew in importance about the same time when temple-worship assumed the greatest importance in society. The protest generally took the following form: " It is foolishness to roam about seeking God in temples and images, and travelling to the holy places. Your God is within you, and what is essential is to learn to realize that." This feature of protest against the forms of worship prescribed in mediæval Hinduism belongs as much to the South, but received greater emphasis in the North owing to the special circumstances of the locality, *i.e.* the advent of Islam as a religion in practice. Though it is apt to be regarded as quite distinct and therefore a separate

form of religion itself, as in Sikhism, it is strictly not so; nor is it unknown in the South, where the peculiar circumstances of Northern India subsequent to the establishment of Muhammadan rule did not exist. Its existence in the South can be accounted for only as a development from the older systems of this protest, of which the most striking illustration is furnished by the Buddhism and Jainism of the originators. It is almost an echo of this that we find among the *Sittas* (Tamil for Siddhas) of the South, the Vīraśaivas of the Deccan, and the followers of various teachers beginning with Kavīr and Nānak in the North. The most attractive feature of this teaching lies in its general protest against caste, and in the actual introduction of certain reforms in society, the abolition of caste being by far the most prominent. Abolition of both caste and temple-worship would remove just the two features that constituted the peculiarity of the Hindu society of Mediæval India. These movements were started at various centres and were carried forward by the preachings of various teachers. Each one of these teachers was ultimately raised to the rank of a prophet. They had each their day and came to be absorbed, as several of their predecessors had been, in the general fold of Hindu society and Hindu teaching. Where some of these attained the greatest success owing to the peculiar local circumstances, they continued to remain more or less separate sects of the general Hindu society, as in the case of the Sikhs and the Liṅgāyats. Notwithstanding their distinct character, they became Hinduized sufficiently to be regarded more or less as sections or castes of the Hindus and no more. This course of development gives clear indication that notwithstanding the multitudinous changes, historical and otherwise, that came over India, Hinduism remained alive, responding to the changes from time to time in various ways and various degrees, only ultimately to absorb them all and still maintain its character as a society with a distinct trait of its own.

The movement has not ceased, and the impact of the Christian West during the last four centuries, with its more recent developments, is creating a new stir in society, such as it has not experienced before, because of the thoroughly changed circumstances of the new economic order and the industrial civilization of the twentieth century. What the ultimate response of Hindu society to this new impact will be, it is now too early to say with any amount of certainty.

HINDU CULTURE AND GREATER INDIA

I

It has been said quite truly, 'He knows not England who only England knows.' The centre is seen in its true bearing from the circumference; and the force of an action is gauged by the reaction. The culture of India has been one of the great civilizing and humanizing factors evolved by man. For the greater part of a millennium, the spiritual life of the larger part of Asia meant mainly its response to the call of the eternal ideas discovered, systematized and humanized by the sages and saints of ancient India. India was a civilizing force in many backward parts of Asia, no doubt. *L'Inde Civilisatrice*, 'India the civilizer,' is indeed a fitting epithet for Mother India, from after the synthesis of Hindu culture about the beginning of the first millennium B.C. down to the closing centuries of the first millennium A.C. For during this period we witness the cultural unification of India, going on simultaneously with the cultural expansion of India into Ceylon and Burma, into Siam, Cambodia and Cochin China in Indo-China, into Malaya and Indonesia, and, to a large extent, into Afghanistan and Turkistan in Central Asia; and we note also the transformation of China and Korea and Japan through their contact with the spiritual forces from India. But India—that is, the Hindu culture of India—was not a civilizing force merely. With many backward races of Asia, social order and organization of a superior type, as well as arts and crafts and general training of the intellect, seem to have dawned for the first time with the advent of the merchant and the Brāhmaṇa missionary from India in the centuries preceding Christ, and probably also preceding Buddha. It was not a mere material uplift that was brought to these backward peoples—Austro-Asiatic and Austronesian in Indo-China and Indonesia, Iranian and Ural-Altaic in Central and Northern Asia, and Tibeto-Chinese in Tibet, Burma and Siam. Not only were their dormant intellectual and other powers quickened to life at the touch of the magic wand of the mind and work of India, but they were enabled to attain the fulfilment of those powers without any hindrance, without the imposition of an alien mentality which would not or could not take into consideration and treat sympathetically the basic racial mind and the *milieu* of racial emotions and attitudes. For Hindu civilization itself is

broad-based on a spirit of harmony and inclusiveness which does not regard anything human as essentially alien or repugnant either to man or to God; and this basic charity of the Hindu mind brought self-respect with civilization to the peoples inside and outside the geographical limits of India who came in touch with its vivifying influence and brought their own contributions to make it richer and more universal, while they themselves participated in the deeper and wider life presented by it. Assimilation, and not suppression by an official type, was the key-note to Hindu cultural expansion; and hence its achievement was something more than that of a mere force of material civilization or civilized organization. This is quite apart from the service rendered by Hindu culture, in bringing to the nations its own spiritual ideals and values. In the case of an ancient and highly cultured people like the Chinese (who side by side with the Indians formed the other great civilizing force in Asia), contact with Indian thought gave the finishing touch in the formation and in the highest expression of their culture. Buddhism brought home to this gifted race the necessity of going into the fundamental questions of existence and of endeavour. This was done in a way which would have delighted the soul of Lao-tze, whom the matter-of-fact Confucius could not understand and who knew that his vision of the Tao was too much for his simple-minded and essentially practical contemporaries.

Wherever it went, Indian philosophy and culture came not to destroy, but to fulfil. It came like the life-giving rain, not like the burning wind or the killing blight. We cannot help feeling sad at the destruction of Mexican, Central American and Peruvian cultures by the greed, the superstition and the fanaticism of Catholic Spain. To any one endowed with imagination and sensibility, the Spanish conquest presents itself as nothing but a catastrophe without a single relieving feature—abolition of human sacrifice alone excepted, but this was more than counterbalanced by peonage, by slavery and by the Inquisition, with their attendant degradation of the people, when the point of view of the Aztecs, the Mayas and other American peoples is considered: contact with the 'higher culture' of Spain has meant a gradual degradation of these highly gifted peoples, from which only recently they seem to be emerging—thanks to their own innate power of resistance and to the spirit of the times. What was lost, or wantonly destroyed, in the process of fitting native American life to the Roman Catholic mentality and to the Roman Catholic attitude, was irrevocably lost to humanity.

We can only wistfully look back to Mexican, Maya and Peruvian cultures at their highest, and feel sad at humanity being denied a unique enrichment of itself, by the possibility of these cultures developing along their own lines to higher heights, being taken from them for ever. A Mexico or a Peru without the Spaniards—who would regret it? But can we contemplate a Java and a Siam, a China and a Japan, without the richness of life and experience, and the astonishing efflorescence of their minds and spirits manifesting itself in literature and art and ritual, which contact with India brought about? We hear of an American-Indian renaissance among the submerged native people of Mexico, which even seeks to instal Quetzalcoatl and Tizoc and other pre-Christian Mexican deities in the place of the Roman Catholic saints imported by the Spaniards, and which finds its pre-Cortesian religious fervour with much of the old ritual of dancing and special offerings, making a Mexican and a national mother-goddess out of Mary, the mother of Christ, at the shrine of Guadalupe Hidalgo. And we note the U.S.A. Americans and others expressing their sympathy for this belated attempt at racial self-realization—to see and experience the world of God and man in their age-old racial way, and not in the superimposed Christian or Roman Catholic way which sought only to destroy without caring to understand. But who could think of a Java without the *Wayang* shadow-plays and the dance-plays which have the *Mahābhārata* and *Rāmāyaṇa* stories for their themes, and of a Siam without Buddhism, of a China without her great medieval art which is a reflex of Buddhism, and of a Japan without Amida and Kwannon—Amitābha Buddha and Avalokiteśvara? The only parallel is that of Christianity in Europe—and Christianity succeeded only because it was forced to adopt assimilation and not wholesale destruction as a means of propagation, although it would never officially acknowledge the fact.

II

It is easy to understand cultures spreading in the wake of conquest or commerce. The spread of Hindu culture in Indo-China and Indonesia certainly began through commercial relations between India and these lands. These commercial relations, it has been presumed, were anterior to the formation of Hindu culture in India. By the fusion of pre-Aryan (Dravidian and Austric) elements with the newly arrived Aryan, Hindu culture (taking ' Hindu ' in its broad sense of ancient Indian, including Brāhmaṇical, Buddhistic and Jaina and other forms of it) evolved, in

the form in which we find it, in the Upper Ganges Valley some time before the closing centuries of the first millennium B.C. The language of the Aryan became the vehicle of this culture, and its outward organization was also Aryan. This culture was carried to the outlying lands of Indo-China and Indonesia and to Central Asia as a sort of overflow from India, as a most natural thing, and in the earlier stages probably there was not much conscious effort in it. And yet the spread of Hindu culture was not like the operation of some blind natural force or unconscious inertia which had its course because there was no serious opposition anywhere. We know of oppositions, in China for instance. Others there were, doubtless, but we have no records. For there is bound to happen the reaction of conservative elements among any people to new forces from far away. But there are ample indications that those who built up the Hindu culture in India and those who helped to disseminate it abroad were moved in their efforts by a conscious will and were impelled by a well-understood spiritual urge to the lands beyond, to carry the message of the good life and of the realization of the highest good that they had found out through a deliberate quest on the soil of India. The foundations of Hindu religious thought may go to Aryan anthropomorphism or non-Aryan animism; the *pūjā* as a ceremony might be in origin a fertility cult, or a form of sympathetic magic; but the spiritual character given to them transformed them into new things, and made them *Hindu*. The Hindu religion and culture that was born in India was born under a great inspiration, the life-giving force of which is still flowing with its waters of immortality. With the rise of this composite culture in India came into being the highest wealth of India in the realm of thought—the Upanishads, Buddhistic philosophy, and Hindu theism and *bhakti* cults—and the Indian sense of sacredness of all life on which Buddhism and Jainism and most later forms of Brāhmaṇism gave the greatest emphasis; and few things in the storehouse of man's wisdom and man's thought can be mentioned as approaching the sublimity of these ideas, and the profundity of these philosophical speculations upon the nature of being. The wisdom, the intellectual quest and the self-discipline of the Brāhmaṇa mingled with the all-embracing compassion and the active charity of the Buddhist *śramaṇa*, and these were as refreshing streams for the parched soul of man over a great part of Asia. The sense of kinship with humanity as a whole (*vasudhaiva kuṭumbakam*) and the yearning for the happiness and salvation of all men formed a great impetus and inspiration to send



RISHI ANGIRASA WITH HIS CONSORT
From an Old Japanese Manuscript
Courtesy: Mr. O. C. Gangoly



VASISHTHA
From an Old Japanese Manuscript
Courtesy: Mr. O. C. Gangoly

forth the Buddhist and the Brāhmaṇa teachers with the message of the *ṛishis* and the Jinas into distant and inaccessible lands. This impetus and inspiration sent them not only to the lands of the East along the way of the sea known to the people of India for ages, to make one with India the Mons and the Khmers, the Chams, the later Burmese and Siamese, and the Indonesians of Malaya, Sumatra, Java, Bali and Borneo, by conquering their hearts and their imagination with their Brāhmaṇa and Buddhist philosophy and lore; but it also urged them on beyond the difficult and dangerous snow-covered mountain-passes of the north-west into the lands of the Śakas, of the Sulikas (Sogdiana), of Kustana (Khotan), of Kucha; and into Tibet, into Mahā-China, or China, and into distant Korea, and probably also to Japan. It was in this way that ancient India obtained for herself the means for the realization of truth, and having obtained it she, in a spirit of joyful participation, followed the paths into countries known and unknown and gave of her treasure to the nations. This dissemination, from India into the lands of Greater India, of high spiritual ideals and values, as well as of arts and science, could not but have been deliberate, and the result of a willing co-operation between the teachers and the taught.

For the teachers did not come there as members of an alien ruling race, with natural advantages by virtue of their superior position. The Brāhmaṇa and the *śramaṇa* came with the Indian merchant community; and although here and there some adventurer might insinuate himself as a power in the land, by marriage into an exalted family and by consequent mingling in local politics, the bulk of the people including the upper classes were always essentially native or local. Indian thought and culture spread in this way: It was not in the wake of a world-conquering king who carried at the head of his legions fire and sword and barbarities and sufferings innumerable. India never made herself manifest to the outside world in the person of a world-shaker like Alexander or Julius Cæsar, Attila or Mahmud of Ghazni, Chingiz Khan or Timur. Her *digvijaya* or world-conquest was the conquest of truth and Law—the *dharma-vijaya* which was the ideal of Aśoka, the greatest and truest Hindu king of history. Herein lies the eternal glory of India. It is the evidence of history that tells us that it was the humble *bhikkhu* dressed in his garment of sewn rags, and the Brāhmaṇa with a scanty loin-cloth on him, who came to China and to Cambodia, like 'a fire hidden under the ashes,' to speak in the Indian way, and carried to these

and other peoples the spirit of India. In this way through their endeavours a true *Magna India*, a Greater India, a material and spiritual projection of India, was created.

For all those Indians who want once more to bring back to life the latent or dying forces of their own people, the history of this Greater India as an achievement of the Indian spirit should act as an uplifting and a compelling inspiration. The study of an old achievement of India in which are present the conscious will and intellect of the Indians of old can only be expected to give us, modern Indians, a new courage and a new hope, and a fresh desire for action, after it has filled us with a due humility in a sense of our present unworthiness. Fortunately for ourselves, the attention of thoughtful Indians has been drawn in this direction.

III

From the report of the Chinese envoy Chang K'ien to Central Asia, it is clear that commercial contact between India and China was already established in the second century B.C. Buddhism is said to have been officially received in China in the first century A.C., and it was flourishing even before that in Central Asia. Definite information about the establishment of Indian connections in Indo-China and Indonesia is some two thousand years old. Afghanistan racially and culturally was largely a part of India. Non-Indian peoples like the Śakas, the Khotanese, the Sogdians—three Iranian *peuplades* of Central Asia; the ancient Kuchans, or Tokharians, an Indo-European people of the northern valley of Chinese Turkistan, now extinct; the Turks and the Mongols, the Tibetans and some other connected Mongoloid groups: these received their religion, art and literature from Buddhist India. The same thing happened to the Austro-Asiatic peoples of South-Eastern Asia—the Mons of Burma and South Siam, the Khmers of Cambodia, and the Chams of Champa; and to the Malay or Indonesian peoples of Malaya, Sumatra, Java, Bali, Lombok, Borneo, Celebes and the Philippines. China, Korea and Japan, although not a part of what can be described as the Greater India of Asia, fell in line with the spiritual attitude of India when they adopted Buddhism, and gradually assimilated it and enriched it with their own contributions of faith and philosophy, art and literature. The present occasion is not suitable for chronicling and describing facts and events: but one may mention that

on the artistic side, Bamyan and Hadda in Afghanistan; the many ruined cities and monasteries in Serindia—ancient Central Asia; Tun Huang on the frontiers of China; the many temples and monasteries in China, Korea and Japan; and the Ānanda Pagoda and other Buddhist temples of Burma; the marvels of Siamese Buddhist architecture; Angkor and other ruins in Cambodia and Champa; Dieng, Borobudur, Prambanan, Panataran and other temples and temple-groups in Java and Bali; these are imperishable monuments of the working of the Indian spirit on the artistic side, working in perfect unison with the souls of the various peoples. A unique empire was built up—an empire sharing not in a common political life under a suzerain, but in a common cultural and spiritual life in a commonwealth of free peoples. The empire that India built overseas and overland was conquered by the piety and the spiritual energy of her sages and monks, and it was a *dharma-rājya*—a glorious empire of which the guiding principle was *dharma* or religious culture and righteousness.

IV

We find an echo of the glory of the Buddhist and Hindu world of Asia in the remains of art and architecture in Central Asia, Afghanistan, Indo-China and Indonesia, and in China, Korea and Japan. The accounts of the Chinese pilgrims to India like Hiuen Tsang and I-tsing, the poetry of the T'ang and subsequent epochs of China, the Buddhist literatures of Japan and China, and the literatures of Java, Bali, Malaya, Siam, Cambodia and Burma bear ample testimony to the working of the spirit of India over the greater part of Asia. How great a place India of old was able to acquire for her lore and for her wisdom in the mind and spirit of the peoples outside India, becomes amply clear through a visit to Buddhist China or Japan and to Siam and Java and other lands. Indian philosophy and the Indian attitude to life and the world around and to the fundamentals of existence, and even Indian ways, have become accepted and assimilated in a manner that is startling at its sudden revelation of the mainsprings of action guiding many strange and far away peoples. At a Chinese Buddhist monastery in Singapore, after taking a vegetarian meal at the refectory of the monastery, we were ushered to a courtyard beside the refectory hall and offered water to rinse our mouths. A small thing this, but this idea of *śaucha*—of personal cleanliness—we did not find persisting anywhere outside of a

Buddhist monastery. We are reminded of the anxiety of the Chinese traveller I-tsing to make his Buddhist compatriots adopt all that India had to teach in this matter, despite his patriotism which we appreciate and with which we can sympathize. The people of the islands of the Indian Archipelago—Sumatra, Java and Bali, have been cut off from the mother-land of India ever since the Turkish conquest of our country in the twelfth century. Bali, as the easternmost outpost of Hindu culture, seems to have lost direct touch with India even earlier. The Hinduism of Bali is a mixture of genuine Indian Hindu notions and the original Balinese (Indonesian) world of ideas and practices. The people have made a part of their being the marvellous, the spectacular and the magical side of popular Hinduism. Stories from the Purāṇas, the *Rāmāyaṇa* and the *Mahābhārata*, new adaptions or modifications of Indian *pūjā*, *śrāddha* and other rites, are there in all their glory. The people have preserved and elaborated, along lines unknown to India, the ritualistic side of Hinduism. Outwardly, it would seem as if only the externals of Hinduism in its pageantry of drama and ritual had their appeal for this people. But a closer acquaintance with some intellectuals dispelled the notion, and showed how wonderfully responsive has been the Indonesian soul to the fundamentals of life posed by the Indian sages. It was at the little town of Karang Asem in Eastern Bali that Rabindranath Tagore was staying, in the end of August, 1927, as the guest of the local *Stedehouder* or Prince, the Anak Agoeng Bagoes Djilantik; and I was privileged to be there with him as a member of his party. Knowing that these things would be of interest to the Balinese Hindus, I had taken with me a set of *pūjā* paraphernalia and other articles connected with the Hindu faith and its ritual. I had to spend a whole morning and an afternoon, talking (through the kind offices of Dutch friends interpreting for us) to the *Padandas* or Brāhmaṇa priests attached to the Prince's house, of things of interest for them and for us. I demonstrated the entire ritual of our *pūjā;* I repeated the *mantras* we use; I handed round slides of Indian temples (no lantern was available to show them properly), and I had to answer their questions on topics of social interest, and on *śrāddha*, on *aśaucha* and other matters. The Prince, a highly intelligent man who had written an interesting little pamphlet in Roman Malay on the Hinduism of Bali, heard and saw everything, and occasionally interposed his questions. After a most interesting day spent in this way, when the evening shades were closing on the pavilion adjoining a tank where this gathering was held, the



ERLANGA AS VISHNU

Courtesy: Mr. O. C. Gangoly



HEAD OF A MAITREYA

Courtesy: Mr. O. C. Gangoly

Prince abruptly asked me a question: ' Enough of the gods, and *śrāddha*, and *devārchana* or worship of the gods, and social order; tell me, what should be man's aim and ideal in life? ' This question indeed was quite startling in its seriousness and its depth, and was not at all expected by me; we were taught to believe that the Indonesian mind was but touched on the surface by the Hindu wave, and that it was magic and pageantry rather than philosophy and thought that had their appeal for it. I was both surprised and pleased at this question, after our long and desultory talk and demonstration on the externals of religion. I asked the Prince, however, through the Dutch friend who was interpreting, to give his own answer to this question put by him; and he said that the gods and the worship and other things were only secondary matters—the proper aim of man's life should be to strive for *nirvāṇa*. And the last words of the Prince, in his Balinese pronunciation of the Malay language (which is the Hindustani of Indonesia), is still ringing in my ears: *Dewa-dewa tidak apa, nirwana satu*—' the gods do not matter, *nirvāṇa* is the sole thing.' I was indeed filled with wonder and pleasure when I saw how in far distant Malayasia the fundamental message of our culture—that the quest of *nirvāṇa* or *moksha* is the *summum bonum* of life—had persisted in the consciousness of the people, although they are cut off from India for over a thousand years. Later on I mentioned to Rabindranath the Prince's question and his own reply; and he too was very pleased to hear it all. He said to me: " These people belong to the Malay race—and their mentality is probably different from that of the average Indian, as also their attitude to life; it is quite likely that they felt attracted primarily by the spectacular side of Hindu culture, and were influenced by our art and our legends; but from the way the *Stedehouder* spoke, it is quite clear that the spiritual message of our land has been received by them properly, and in the right spirit; and indeed, if it had not been so, they would not have clung so tenaciously to their Hindu religion and culture in spite of such tremendous counter-influences from their environment." After our tour in Bali and Java was finished, Rabindranath composed a most beautiful poem on Bali, in which he depicts India as a princely lover wandering in some quest and meeting Bali, the princess of a distant island; and in this poem he was moved to write the following lines at the above-mentioned and other unexpected revelations of the deeper spiritual impulses of Balinese Hinduism:

"When on the next day, on the top of the bamboo grove, the youthful Dawn
Awoke at the rosy caress of the young Sun,
In silence I came out and stood in the open of thy courtyard;
I gave my ear and listened—
Somewhere thou wert repeating in a low voice
The *mantra* that brings wisdom and awakening, which thou didst receive in thy ear—
The message that dispels ignorance, which both of us once read together,
Thinking of the feet of the Great Yogi, and folding our palms in worship."

This ignorance-dispelling message taught by the Great Yogi—Śiva or Buddha—India has taken to the world outside, and the nations have received that message into their heart, and sung it in unison with India. This has been the great work of India—of Hindu culture—in Greater India and in other lands. This is far more than any material civilization that she might have inspired abroad.

Will it be given to India to realize that message once again in her life, so that she can serve humanity in her old way once more, as its *kalyāṇa-mitra*, as its friend and fellow in the quest of the highest good?

THE HINDU KINGDOMS OF INDO-CHINA AND JAVA

Recent discoveries in the Indus and Ravi valleys point to a close connection between the prehistoric civilization of North-western India and the cultures of Elam, Sumer, Cyprus and Crete. Southern and Eastern India too seem to have been in close touch from very remote times with Indo-China and other countries of South-eastern Asia. Prof. Sylvain Levi, in his *Pre-Aryan et Pre-Dravidien dans l'Inde*, gives ample evidence from linguistic, cultural and even political data of intimate relations in prehistoric times between the people inhabiting the western and the eastern coast of the Bay of Bengal. He concludes, "The movement which carried the Indian colonization towards the Far East, probably about the beginning of the Christian era, was far from inaugurating a new route." Thus, during the last two thousand years, "adventurers, merchants and missionaries profited by the technical progress of navigation and followed, under better conditions of comfort and efficiency, the way traced from time immemorial by the mariners of another race (Mon-Khmer), whom Aryan India despised as savages."

We shall, however, in this short paper confine ourselves to the spread of Indian culture in Indo-China, Java, Sumatra, etc., during the period for which we have recorded history. Buddhist *Jātaka* stories mention merchant ships from Benares and Champa (Bhagalpur) sailing down the Ganges into the open sea and then steering their course towards Suvarṇa-bhūmi, the *El Dorado* of Indian adventures, by which name were meant generally the countries situated to the east of the Bay of Bengal. Kauṭilya, in his *Arthaśāstra*, refers to Suvarṇa-kūḍyaka, probably a place in Sumatra, as a country of rare and precious products. In the *Rāmāyaṇa* there are allusions to the Kirātas who lived on the Arakan Coast on the heights of Mount Mandāra (the region of Kirrhadia and Mont Maiandros in Ptolemy's Geography) and to Yavadvīpa (Java).

CAMBODIA

It is about the first centry A.D., however, that we are on *terra firma*. At this stage, what was at first perhaps only commercial intercourse was followed by political influence. From Chinese Imperial annals we learn that the queen of Fu-nan (early Chinese name for Southern Cambodia) after a naval battle submitted to Kauṇḍinya, who

came with a bow presented to him by a god. Kauṇḍinya married the native queen, and, as she had no clothing, gave her clothes. In a Champa (Annam) inscription of 658 A.D., something like the same story is told in connection with the founding of Bhavapura, the capital of Kambuja (Cambodia): "It was there that Kauṇḍinya, the greatest of Brāhmaṇas, planted the javelin which he had received from Aśvatthāman, the son of Droṇa. There was a daughter of the Nāga king of the name of Soma who founded a royal race on this earth. The great Brāhmaṇa Kauṇḍinya married her for the accomplishment of the rites."

Pallava tradition too tells us that the legendary ancestor of the Pallava kings, Skandaśishya, was the offspring of Aśvatthāman, the son of Droṇa, and the daughter of a Nāga. We should also note that the earliest Sanskrit inscriptions of Indo-China as well as of Java and Borneo are in the Pallava Grantha script, and that the royal title of the monarchs in the inscriptions of all these countries (Cambodia, Annam, Borneo, Java, etc.,) is Varman—the title borne by the Pallava sovereigns of Kāñchī. As Prof. Cœdes says, "The Cambodian legend of the Nāri brings us back to the Pallava court." One of the earliest and most important waves of emigration (leaving aside movements of prehistoric times) must have come from this region of Southern India.

FU-NAN

The time of Kauṇḍinya's arrival in Fu-nan (South Cambodia) cannot be later than the first century A.D. as far as we can calculate from the dates of the reigns of his successors as given in Chinese chronicles. Some of these rulers of Fu-nan were powerful monarchs and forced the neighbouring kingdoms to become vassal States. One of these vassal States was the kingdom of Toun-sien—the Chinese name for a realm "which on its western side touched India." In this dependency of Fu-nan "more than a thousand Brāhmaṇas of India reside. The people follow their doctrines and give them their daughters in marriage. They read their sacred books day and night."

One of the monarchs of Fu-nan, whom we know only by the Chinese version of his name, Fan-chan, sent an embassy to India. This embassy took more than a year to reach the capital of India, probably Pātaliputra. The 'king of India' was very much surprised to see these men from the shores of the furthest seas. After showing them the interior of his kingdom he sent them back with two persons from his own court with

an offering of presents to the king of Fu-nan. When the embassy returned with the two Indian envoys (*circa* 245 A.D.), two Chinese envoys happened to be at the court of Fu-nan. The Chinese heard from the Indian envoys about India: "That is a country where the law of Buddha prospers. The people there are straightforward and the land is very fertile. The title of the king is Meou-lun (Chinese for Muruṇḍa ?). The capital has a double enclosure of ramparts. Streams and sources of water-supply are divided into a large number of winding canals which flow into the ditches under the walls of the city and thence into a great stream (Ganges ?). The palaces and temples are adorned with sculptured and engraved decorations. In the streets, the markets, etc., one hears bells of joyous sound, sees rich dresses and smells fragrant flowers. The merchants come there by land and sea and assemble in great number and offer for sale jewels and all the objects of luxury which the heart can desire. To the right and left there are great kingdoms (here the Chinese versions of Kapilāvastu, Śrāvastī, etc., are given). Several kingdoms, even though situated at great distances from India, obey the king as they consider this kingdom to be situated in the centre of the universe."

Prof. Sylvain Levi believes that the Chinese name Meou-lun corresponds to Muruṇḍa and he quotes a Jaina work which names Pāṭaliputra as the residence of Muruṇḍa *rājās*. According to the *Vāyu Purāṇa* too a Muruṇḍa dynasty ruled in India for 350 years.

TWO NEW INSCRIPTIONS

The Chinese chronicles were our only source of information about Fu-nan till 1931, when M. Cœdes deciphered two inscriptions, one Vaishṇava and the other Buddhist as regards subject-matter, which may safely be attributed to this Fu-nan period of Cambodian history. The first inscription of a royal prince Guṇavarman, is closely related on account of the archaic nature of its writing to certain inscriptions of Borneo, Champa and Java, which have been accepted as belonging to the fourth or early fifth century A.D. by epigraphists. In fact, the script is of a much earlier type than that of the inscriptions of Bhavavarman (the earliest known hitherto in Cambodia), which belong to the middle of the sixth century A.D. Again the second inscription mentions by name two kings whom Chinese chronicles describe as the last two monarchs of Fu-nan, and this inscription on paleographical grounds

seems to belong to a later date (early sixth century) than the first inscription, which, therefore, should be attributed to probably the first half of the fifth century A.D.

The introductory lines of the first inscription have been too much damaged to be legible. But in the second half of it we are told that Guṇavarman, son of the king (name illegible) had established on this earth the impress of the feet of Bhagavān. On the eighth day, this only object, consecrated by Brāhmaṇas well versed in the Vedas, Upavedas and Vedāṅgas, was proclaimed by learned sages throughout the world as Chakratīrthasvāmin. In the concluding stanzas it is stated that all that had been donated to Bhagavān by Guṇavarman should be at the disposal of all pious *bhāgavatas*, and that the *mahātmā* (noble soul) who would carefully look after the property of the god would attain the supreme bliss of *Vishṇu-loka*.

This recently deciphered inscription, supposed to belong to the first half of the fifth century A.D., is the earliest of inscriptions hitherto discovered in Cambodia. About the same period we learn from a Chinese chronicle that a second Kauṇḍinya arrived in Fu-nan. "Kauṇḍinya, a Brāhmaṇa from India, heard a supernatural voice calling to him, 'You must go and reign in Fu-nan.' Kauṇḍinya rejoiced in his heart and reached a country which was to the South (of Fu-nan). When the people of Fu-nan heard of him, the whole kingdom was stirred with joy; they came to him and chose him king. He changed all the laws and regulations according to Indian traditions." Thus the Chinese historian describes the process of Indianization of this distant realm of Indo-China.

From Chinese annals again we learn that a king whose personal name was Jayavarman and whose family name was Kauṇḍinya, sent as envoy to the Imperial court of China an Indian monk Śākya Nāgasena in 484 A.D. This monk, on arriving at the Chinese capital, said that the cult of the god Maheśvara flourished in his country. The god had his perpetual abode on Mount Motan, where auspicious trees grew in great abundance. From this sacred place the might of the god descended on the earth and all the people were quiet. The Emperor of China, according to the Chinese historian, replied: "Yes, Maheśvara manifests his marvellous power and confers his gifts on Fu-nan. Though these are accounts of a foreign country, I praise them from far off with profound joy." Shortly afterwards an Imperial order was issued from the Chinese capital conferring the title of "General of the pacified South,

King of Fu-nan" on Kauṇḍinya Jayavarman, "who and his ancestors from generation to generation had governed the distant countries of the South."

It was during the reign of Jayavarman that two Buddhist monks of Fu-nan, Saṅghabhāra and Mandra, went to China and by order of the Emperor translated Buddhist texts into Chinese.

The second of the Sanskrit inscriptions, already mentioned as having been recently discovered, belongs to the reign of Rudravarman, the successor of Jayavarman. It begins with an invocation to the Buddha "whose compassionate mind is devoted to the good of others." Then follows a eulogy of King Rudravarman, "a unique creation of the Creator." After this is mentioned that King Jayavarman, father of King Rudravarman, appointed as inspector of royal property the son of a pious Brāhmaṇa. The concluding portion is badly damaged and is illegible.

This inscription, referring to Rudravarman and his predecessor Jayavarman, is to be attributed to the first half of the sixth century A.D., as Chinese historians mention Rudravarman as reigning in 539 A.D. Soon after this Fu-nan was conquered by its vassal State Chen-la (Chinese name for Kambuja). This happened about the middle of the sixth century A.D., and from this period begins a long succession of Sanskrit and Khmer (the Cambodian vernacular) inscriptions which now take the place of the Chinese chronicles as our source of information regarding Kambuja (Cambodia).[1]

Thus fell Fu-nan, probably the earliest of the Indianized kingdoms in Indo-China. We know it only by its Chinese name and till very recently all our information about it was derived solely from Chinese sources. Now we know from the two Sanskrit inscriptions deciphered in 1931 that Vaishṇavism as well as Buddhism flourished side by side with the cult of Śiva in this realm. Indeed, according to the Chinese traveller I-Tsing, who describes this country at the end of the seventh century A.D., "the law of Buddha prospered and expanded (in Fu-nan). But at the present time a wicked king has completely destroyed it and there are no more monks." The king belonged to the new dynasty of Bhavavarman of Kambuja and all these monarchs were staunch worshippers of Śiva.

[1] Kambuja (Chinese Chen-la) might have originally meant only the northern portion of Cambodia, but after the fall of Fu-nan it was applied to the whole of Cambodia. Cambodia is the Europeanized form of the Sanskrit name Kambuja—the land of Kambu *rishi*. Khmer is the name of the region in the vernacular of the country.

BHAVAVARMAN OF KAMBUJA

Bhavavarman and his successor Mahendravarman, the conquerors of Fu-nan, were warlike monarchs and their inscriptions also breathe a warlike spirit. Kambuja epigraphy shows generally a symmetry and elegant finish rarely found in Indian inscriptions, and the literary skill shown in some of them is of a high order. Here are a few passages from an inscription in faultless Sanskrit describing Bhavavarman's campaigns: "The dust raised by his (the king's) army, settling down on the cheeks of the women of the enemy, from which all decorations had vanished (on account of mourning), looked like sandal powder......Having first conquered the ocean-girdled earth by force, in his administration he conquered it a second time by his kind forbearance."

Another inscription of this reign mentions King Bhavavarman's sister, who was, like a second Arundhatī, the devoted wife of a learned Brāhmaṇa, Somaśarman. Her husband, the inscription tells us, arranged for a daily recitation of the *Rāmāyaṇa* and the *Mahābhārata* and a Purāṇa (which is not named). We are also told that this royal princess had a son (Hiraṇyavarman) with the Kshatriya title of Varman. So here a Kshatriya princess is married to a Brāhmaṇa and the offspring is a Kshatriya. The mention of the daily recitation of the great epics of India in a sixth century Cambodian inscription is also noteworthy.

A VEDANTIC INVOCATION

Bhavavarman's inscriptions bear no dates. The earliest dated inscription belongs to the reign of his brother and successor Mahendravarman and is of the year 526 of the Śaka era (604 A.D.) The Śaka era is used throughout in Kambuja epigraphy and the dates are usually expressed by symbolic words, e.g. in this particular inscription by the arrows (5), the heavenly twins (2) and the *rasas* (6), *i.e.* 526. In India such word-numerals are used in inscriptions from the eighth, rather from the ninth century. So from this point of view this Kambuja inscription is of unique interest as being the earliest in Sanskrit epigraphy to express dates by symbolic words. The Vedāntic invocation with which it begins is also remarkable: "He whom, by the constant practice of meditation and a peaceful frame of mind, the wise feel as being enthroned in their hearts...the inner light, whom they worship, desirous of attaining the Parama-Brahma. The practice of asceticism,

of the study of scriptures and of sacrifices, if devoted to Him, procures results beyond description, not only for those who are attached to the fruit of those pieties, but also for those who have renounced the fruit of action...."

An inscription of the reign of Īśānavarman, the son and successor of Mahendravarman, refers to the consecration of an image in which the bodies of Śiva and Vishṇu are joined together half and half. The cult of Hari-Hara seems to have been popular in Kambuja, as there are many images of the combined deities still existing.

KAMBUJA IN THE EIGHTH CENTURY

Kambuja history during the greater part of the eighth century is a blank and, as we learn from Chinese sources, anarchical conditions prevailed as the country was split up into two States. We, however, possess an interesting account by an Arab merchant Sulayman of a raid on Kambuja (the Arabs call it by its name in the vernacular, Khmer) by the Mahārāja of Zabaj. Zabaj is the Arabic version of the name Śrīvijaya—a powerful kingdom of Sumatra. The king of Khmer which is described as a country singularly free from drink and debauchery, was jealous of the power and prestige of the Mahārāja of Zabaj and declared in public that he wished to see the Mahārāja's head on a plate. The news reached the ear of the Mahārāja in his distant island kingdom. He at once prepared a thousand ships and, before the king of Khmer could suspect anything, reached the mouth of the river leading to the capital. The king of Khmer was captured and summoned before the Mahārāja, who told him that he would not molest the people of Khmer, but would avenge himself by seeing the head of the Khmer monarch on a plate. So the king of Khmer was beheaded and the Mahārāja returned to his island. Sulayman ends his narrative by stating that when the king of India and the Emperor of China heard of all this, the Mahārāja of Zabaj rose in their estimation.

JAYAVARMAN II

With the accession of Jayavarman II (802 A.D.) the unity of Kambuja is restored and a brilliant epoch is ushered in. There is a very important inscription, partly in Sanskrit and partly in Khmer, which gives the history of a family, the heads of which held the post of High Priest of the realm for several centuries and often wielded immense power. In this inscription is stated that His Majesty Parameśvara (the posthumous title of Jayavarman II) came from Java to reign and made

the venerable Śivakaivalya the royal *purohita* (priest). Then a Brāhmaṇa Hiraṇyadāma, versed in the science of magic, came from Janapada, because His Majesty had invited him to draw up a ritual so that Kambuja-deśa might no longer be dependent on Java, and that there might be in the kingdom a *chakravartin* sovereign. The Brāhmaṇa composed a ritual according to the *Vināśika* and consecrated Devarāja (the king of the gods). The Brāhmaṇa (Hiraṇyadāma) recited the *Vināśika*, the *Nayottara*, the *Sammoha*, and the *Śiraśchheda* from beginning to end, so that they could be written down, and then he taught Śivakaivalya these texts. These four texts, according to this inscription, were the four faces of 'Tumburu.' And Hiraṇyadāma taught Śivakaivalya how to carry on the ritual of Devarāja. His Majesty vowed to employ only the family of Śivakaivalya to celebrate the cult of Devarāja. The god resided in all the capitals, where the kings took him, in the capacity of the protector of the realm, during the reigns of successive sovereigns.

These extracts from the inscriptions of the High Priest raise some important questions. What was this Java from which place Jayavarman II came to reign in Kambuja? It is probably not the island of Java but Śrīvijaya in Sumatra (called by the Arabs Zabaj), which at this time held Central Java under its sway. We have already referred to the raid of the Mahārāja of Zabaj (Śrīvijaya) on Kambuja. So Jayavarman came at first as a protégé of the Śailendra monarchs of Śrīvijaya to rule over Cambodia, but later on cut off all connection with the suzerain power. Indeed, the inscription informs us, he invited Hiraṇyadāma to draw up a ritual so that Kambuja might no longer be dependent on Java (Śrīvijaya). Mahāyāna buddhism was the State religion of Śrīvijaya, and it seems that Jayavarman II also professed this religion in the beginning. But with his adoption of the new cult taught by Hiraṇyadāma he apparently gave up Mahāyāna doctrines as implying political dependence on a foreign country.

About the new cult introduced by Hiraṇyadāma, I ventured to suggest seven years ago that it was a Tāntrika form of Śaivism, and that among the Tantras of the Vishṇukrāntā region (extending from Bengal to Chittagong) the names of several Tāntrika texts resemble closely the titles of three of the texts taught by that Brāhmaṇa to the first High Priest of Devarāja. Since then my esteemed friend Dr. P. C. Bagchi has been able to trace three out of the four texts mentioned in the Cambodian inscription in the Nepal Durbar Library. In the

Brahma-yāmala three of the texts, *Nayottara*, *Sammoha*, and *Śiraśchheda*, are referred to as issuing from the left current (*vāmasrotas*). The last (*Śiraśchheda*) seems to be identical with the *Jayadratha-yāmala*, of which a copy exists in Nepal. *Naya* and *Uttara Sūtras* (together constituting *Nayottara*) form a part of the *Niḥśvāsa-tattva-saṁhitā* in the Nepal Library. The fourth text *Vināśika* seems to have been a supplement to the *Jayadratha-yāmala*. And all these Tantras were of North Indian origin. Tumburu, Dr. Bagchi suggests, may have been an emanation of Śiva himself, who communicated the four texts through his four mouths.

Jayavarman II not only introduced Tāntrika Śaivism, he is also represented in the inscriptions as a great builder, who built three capitals one after another. All these capitals were located near the Great Lake (Tonle Sap), which region from this time becomes the political centre of the Kambuja kingdom.

A NEW DYNASTY

Shortly after the death of Jayavarman a new dynasty rose to power. The genealogy of the first monarch of this dynasty, Indravarman, like many other genealogies of distinguished persons in Kambuja, is matriarchal in character (*i.e.* laying more stress on the mother's side than on the side of the father). With this ruler also seems to begin the practice of the deification of ancestors and their identification with Śiva and Vishṇu (in the case of men) and with Durgā (in the case of women). Posthumous titles of kings indicating that they had gone to the heavens of their *ishṭa-devatās* such as Śivaloka, Vishṇuloka, Nirvāṇapāda begin about this time.

YAŚOVARMAN

The most illustrious sovereign of this dynasty is Yaśovarman (889-910 A.D.) who has celebrated his name in many inscriptions and in his new capital, the famous Angkor Thom (Nagara Dhāma). The most noteworthy of his inscriptions are digraphic, *i.e.* they give the same text in two scripts. One of the scripts is of South Indian (Pallava) origin, and all the Kambuja inscriptions (except these digraphic inscriptions) are in this script. But the other script is unique in Cambodian epigraphy and belongs to the Nāgarī class of North Indian alphabets. As regards general aspect, the letters are not broad as in

Devanāgarī, but long, vertical and angular as in Bengali. Moreover the *e-kāra* (ে) is in these inscriptions of Yaśovarman a curve placed to the left of the consonant just like the Bengali (কে=*ke*) and not on the top of the consonant as in Nāgarī (के=*ke*). Such a script is to be found also in the inscriptions of the Śrīvijaya rulers of Sumatra. These Śrīvijaya monarchs were ardent Mahāyāna Buddhists, and I have suggested in my book *Indian Cultural Influence in Cambodia* that they got both the Mahāyāna cult and this North Indian script from Pāla Bengal. And we know that in the time of Jayavarman II there were close relations between Kambuja and Śrīvijaya, so that this Northern script in Yaśovarman's inscriptions may have come from Bengal *via* Śrīvijaya.

About the subject-matter of these inscriptions we can only say here that they contain interesting information about the rules and regulations of Śaiva, Vaishṇava and Buddhist *āśramas* (hermitages), and that they show an intimate knowledge of the works of Guṇāḍhya, Suśruta, Vātsyāyana, Mayūra, Pravarasena, etc. Even obscure names in Sanskrit literature like Śūra, Bhīmaka, and Viśālāksha are also cited in these Cambodian inscriptions, which belong to the closing years of the ninth century A.D.

ANGKOR

The inscription of the High Priests of Devarāja (a *Śiva-liṅga*, the presiding deity of Kambuja) states that His Majesty Paramaśivaloka (the posthumous name of Yaśovarman) founded the city of Yaśodharapura (Angkor Thom, for centuries the capital of Cambodia), and that he brought Devarāja to this new capital. It proceeds to say that then the king constructed the Central Mount, and that the High Priest (Vāmaśiva) consecrated the Holy *liṅga* (Devarāja) inside the Central Mount. Till recently the Central Mount was identified with the great tower of the Bayon, the magnificent Śiva temple dominating the capital. From very recent researches it appears that the Bayon was built not at the end of the ninth century A.D., but towards the close of the twelfth century A.D. The Central Mount of the inscription is now supposed to be the Vimānākāśa (sky-tower), a pyramid-shaped temple in the courtyard of the royal palace which was crowned in the palmy days of Cambodia with a wooden tower of splendid design. In short, Yaśodharapura (Angkor) was one of the greatest and most artistic cities of the world in the Middle Ages.

RISE OF BUDDHISM

Towards the close of the tenth century, in the reign of Jayavarman V, the last king but one of the house of Yaśovarman, Buddhism seems to have made great progress in Cambodia. In an inscription of Kīrtipaṇḍita, the Buddhist minister of this monarch, we find: "He (Kīrtipaṇḍita) lighted again the torch of the true law, the *Śāstra Madhyavibhāga* and others, which the sins of the world had extinguished. He brought from foreign lands a large number of books on philosophy and treatises like the commentary of the *Tattvasaṁgraha* so that their study might spread." The books mentioned are well-known Mahāyāna works.

SŪRYAVARMAN I

The throne of Kambuja now passes to a distant relation, the son of the king of Nagara, Śrī Dharmarāja (Ligor, in the Malay Peninsula), who ascends the Kambuja throne with the title of Sūryavarman I. An inscription thus records the overthrow of the dynasty of Yaśovarman: "There was a king Śrī Sūryavarman born of the solar race whose reign commenced in 924 Śaka era (1002 A.D.). His feet are the *bhāshyas* (commentaries) of Patañjali, his hands are the *kāvyas* (epics), his six organs of sense are the six systems of philosophy, and the *Dharmaśāstras* constitute his head......His valour is to be judged from this that this sage (*muni*) has won in battle the kingdom from a king who was surrounded by other princes." It was in the reign of this warlike monarch that Siam (Dvārāvatī) was annexed to the realm of Kambuja. The new ruler was a fervent Buddhist, as his posthumous name of Nirvāṇapāda clearly indicates. But the fact that the king was Buddhist did not interfere with the official cult of Devarāja, which went on as before.

Sūryavarman's successor Sadayādityavarman II is the last monarch mentioned in the inscription of the High Priests, which covers the period from the reign of Jayavarman II to this reign (802 to 1052 A.D.). We learn from the concluding portion of this ecclesiastical record that the king learned from the High Priest Jayendrapaṇḍita, astronomy, mathematics, grammar, the *Dharmaśāstras*, etc. He celebrated also the *dikshās* (rites of initiation) commencing with the *bhuvanādhva* and the *brahmayajña*, and he performed the *mahotsava-pūjā* according to *vrah guhya*. *Vrah* is a Khmer word meaning great, and this *vrah guhya* or great secret was probably a Tāntrika *dīkshā*.

ANGKOR VAT

Another dynastic change took place towards the end of the eleventh century A.D. It is now almost certain that the most famous temple of Cambodia, the Vishṇu shrine of Angkor Vat, was built during the reign of Sūryavarman II of this dynasty. It seems that the credit of being the designer of one of the most wonderful buildings of the world belongs to the last of the great Brāhmaṇas of Kambuja, Divākarapaṇḍita, the *guru* of Sūryavarman II as well as of two of his predecessors.

When the French naturalist Henri Mouhot rediscovered Angkor Vat in 1860, wonder-struck at the unexpected sight of the colossal temple in the midst of a dense jungle, he wrote that it was the most wonderful structure in the world, the like of which Greece or Rome had never built.

Angkor Vat (Nagara Vat or City Temple) is at a distance of about a mile from the Capital (Angkor Thom or Nagara Dhāma), and, not being cramped within a town, everything here is on a grand scale. The moat surrounding it on all sides may well be called a lake, and the rectangular stone wall enclosing the temple is 2½ miles in length. From the entrance there is a superb perspective of the great shrine rising in three terraces one above the other. The central tower, crowning the main shrine, rises 213 feet above the ground level. There are three galleries, one in each terrace, and the first gallery is adorned with splendid bas-reliefs depicting court scenes and scenes from the *Rāmāyaṇa*, *Mahābhārata*, and *Harivaṁśa*. A point to be noted is the predominant part given to Vishṇu and his Rāma and Kṛishṇa incarnations. Brief Khmer inscriptions in the court scenes refer to His Majesty Paramavishṇuloka, which is probably the posthumous title of Sūryavarman II. Angkor Vat, begun during his reign, may have been completed after his death.

JAYAVARMAN VII

We should now conclude our hasty survey of the glorious annals of Kambuja with a brief sketch of the career of Jayavarman VII, the last of the grand monarchs of Cambodia. New light has been thrown on his early life by the recent discoveries of the great French savant M. Cœdes. After the death of his father Dharanīndravarman II, it seems that Jayavarman, for some reason or other, could not obtain possession of the throne, which passed to Yasovarman II. Jayavarman



ANGKOR VAT, A VISHṆU TEMPLE

From Souvenir du Cambodge, L. Crespin, Saïgon



BYON, A SIVA TEMPLE

From Souvenir du Cambodge, L. Crespin, Saigon

had to live a life of exile in Champa (Annam), while his wife Jayarājadevī (the daughter of a Brāhmaṇa) lived the life of an ascetic in Kambuja. A badly damaged inscription tells us of the *tapas* of the princess, of her emaciated limbs, of her tresses converted into *jaṭā*, and the tears she shed for her absent lord. The news of a conspiracy against the king reaching the ears of Jayavarman, he hurried back from Champa. But he came too late to save Yasovarman II from the usurper Tribhuvan-ādityavarman (a *bhṛitya* or official of the late king) who now seized the throne. Jayavarman quietly bided his time, and the opportunity came when the king of Champa invaded Kambuja and slew the usurper (1177 A.D.). After four years of anarchy Jayavarman was crowned in 1181 A.D.

The vicissitudes of his life taught both Jayavarman VII and his queen Jayarājadevi a new outlook on life which is reflected in the inscriptions of this reign. One hundred and two hospitals (*ārogyaśālā*) were built in the different provinces, and every year provisions and medicine were supplied to these hospitals from the royal magazines. The list of articles includes, besides provisions, honey, *pippali*, ajowan, nutmegs, *kshāra* (alkalis), camphor, aniseed, cardamons, cloves, deodar, asafoetida, garlic, a paste of ten roots, and 1960 boxes of medicine for piles. In the hospital inscriptions the king proclaims: "The physical pain of men became in me (the king) a pain of the soul and was more painful to me than to the actual invalids, for it is the suffering of the State which makes the suffering of the kings, and not their own pain." All these inscriptions are reverently dedicated to Buddha—*bhaishajya-guru*, and the king and the queen were both devoted adherents of Mahāyāna. The queen-mother, according to the custom of apotheosis in Cambodia, was supposed to be identified with Prajñāpāramitā.

Jayavarman VII was also a great conqueror. Both from Cambodian and from Chinese sources we learn that Champa as well as Pegu (in Burma) were annexed to Kambuja. Considerable portions of the Malay Peninsula also acknowledged the sway of Jayavarman VII.

He was also a great builder. The Bayon (*Vaijayanta*), next to Angkor Vat the greatest temple in Cambodia, is now attributed to him. It was originally a Buddhist shrine, but later on it was converted into a temple of Śiva.

CONCLUSION

It was in this period that Kambuja was at the pinnacle of her glory. At the end of the thirteenth century A.D. Chinese travellers still speak of Kambuja as a land of fabulous wealth. But Siamese inroads were already working havoc in the western regions of the realm. Sanskrit inscriptions, though becoming less and less frequent and less polished, continue in the fourteenth century. Caught between the two fires of Siamese and Annamite onslaughts (the Annamites having overthrown the Hinduized kingdom of Champa), the Khmer kings left Angkor and retired into the interior. Perpetual wars afflicted the country, which by this time had lost all its former glory.

We have seen how thoroughly the realm of Kambuja (Cambodia) was Hinduized. Inscription after inscription, in elegant Sanskrit, bears witness to the study by Cambodian princes and scholars of the Vedas, the epics of Vālmīki and Vyāsa, the grammar of Pāṇini, the six systems of philosophy, etc. Libraries are mentioned well-stocked with many different kinds of books on all the Śāstras. Even obscure names in Sanskrit literature occur in King Yasovarman's inscriptions. Cambodian law still bears the impress of Hindu law. What is particularly noteworthy is that every phase of Indian culture and religion is reflected, it seems without much delay, in the intellectual and religious life of this distant country across the seas. I may conclude this section by pointing out that at first South Indian influence (especially from the Pallava kingdom) seems to have been predominant, but later on North Indian influence, that of Magadha and Pāla Bengal in particular, seems to have played a leading rôle in the Indianization of Indo-China.

JAVA AND SUMATRA

Yavadvīpa (Java) is mentioned in the *Rāmāyaṇa*, where Sugrīva sends out searching parties in quest of Sītā. Sugrīva, the ally of Rāma, is describing in the fourth book (*Kishkindhyā kāṇḍa*) the itinerary to be followed. After describing the regions through which the Jumna, the Ganges and the Brahmaputra flow, he mentions places which can be located in Indo-China in Ptolemy's map. After the description of the 'isle with the wall of gold' (Suvarṇadvīpa or Sumatra) we come to the passage: "With all your efforts reach Yavadvīpa (Java), adorned with seven kingdoms, the island of gold and silver, rich with mines of gold."

Even if this passage in the *Rāmāyaṇa* be a later interpolation, it could not have been inserted later than the first century A.D. For a Buddhist work contains a passage which, as Prof. Sylvain Levi has shown, follows closely the *digvarṇana* (description of the route) in the *Rāmāyaṇa*. This work, on which Aśvaghosha wrote a commentary, cannot be ascribed to a period later than the first century A.D.

Ptolemy in his Geography thus describes Java: "Iabadiou, which means 'the isle of barley,' is said to be of extraordinary fertility and produces plenty of gold." So Ptolemy knew the meaning of the Sanskrit name Yavadvīpa of the island. He was an astronomer of Alexandria, and his work can be assigned to the middle of the second century A.D.

Again, as Prof. Sylvain Levi has shown (*Etudes Asiatiques* II. pp. 1ff.), the *Niddesa*, a commentary (not later than the third century A.D.) on the *Pāli Buddhist Canon*, gives a list of places which a navigator might visit while sailing along the east coast of the Bay of Bengal. In this list we find the mention of Java and Sumatra among the names of sea-side localities in Burma and Malay Peninsula—some of them with curious designations, reminiscent of Sindbad's adventures, such as Śaṅku-patha (a place which can only be climbed with the help of spikes), Chhatra-patha (where umbrellas were to be used as parachutes for getting down), Śakuna-patha (to which birds serve as guides), etc.

Chinese chronicles also mention a king of Java, the Chinese version of whose name seems to indicate the purely Indian name of Devavarman, who sent an embassy to Çhina in 132 A.D., and received from the Chinese Emperor a golden seal and a violet ribbon.

The earliest Sanskrit inscriptions come from Western Java, are written in the script known as Pallava Grantha, and though not dated, can be assigned on account of their archaic character to early fifth century A.D. These epigraphical records tell us of Purāṇavarman, lord of Taruma-nagara (near modern Batavia in Western Java), compare the foot-prints of this king with those of Vishṇu, and also refer to the construction of two canals Chandrabhāgā and Gomatī. *Taruma* is the indigenous name for indigo.

In 413 A.D. Fa-Hien reached West Java from Ceylon on his way to China. The pious pilgrim states that in Java there were many Brāhmaṇas, but Buddhists were not of sufficient importance to be worth mentioning.

Shortly after this in 423 A.D. Guṇavarman, a prince of Kashmir who had become a Buddhist monk, preached Buddhism in Java before he proceeded to China. Both Fa-Hien and Guṇavarman mention trading vessels, full of Hindu merchants, plying between Java and China.

Towards the end of the sixth century A.D. Western Java seems to have been deserted, perhaps on account of volcanic eruptions, and Central Java rose into prominence. It is in Central Java that we find the first dated inscription—the Janggal inscription of the Śaka year 654 (732 A.D.) It is Śaiva in tone and it mentions *Kuñjara-kuñja*, Agastya's *āśrama* (hermitage) in South India. The Dinaya inscription (760 A.D.) records the consecration of an image of Maharshi Agastya. A much later inscription (863 A.D.) written not in Sanskrit but in Kavi (old Javanese), refers to the descendants of Agastya as having settled in the island of Java. Apparently the cult of Agastya was prevalent in Java in this period. Was it a remnant of old traditions of Agastya himself having left India for foreign shores as the pioneer of Hindu colonizing activities? Legends of Agastya representing him as humbling the Vindhyas and drinking up the sea may be interpreted as recording the tradition of a historical personage who led the way in the Aryanization of South India and in the Indianization of Java and perhaps other distant foreign lands.

In the latter part of the eighth century Central Java was annexed to the maritime kingdom of Śrīvijaya in Sumatra. The Śailendra dynasty of Śrīvijaya professed Mahāyāna Buddhism. Indeed, a Malay inscription of a Śrīvijaya monarch dated 606 Śaka era (684 A.D.) is the earliest evidence of the existence of Mahāyāna Buddhism in Sumatra, Java or Indo-China. In this inscription King Jayanāśa of Śrīvijaya uses terms which belong to the Vajrayāna. Now the Vajrayāna school developed principally in Bengal about the middle of the seventh century. Saraha, the first *guru* of this school, was for a time the head of the famous institution of Nālandā. Anaṅgavajra, another well-known writer of Buddhist Tāntrika texts, was one of the sons of Gopāla, the founder of the Pāla dynasty of Bengal. Indeed the latter writer must have been a contemporary of this Sumatran monarch Jayanāśa. It is really wonderful how rapidly a new doctrine, rising into prominence in India, spreads almost simultaneously in realms so distant as this island kingdom.

An inscription of a Śailendra monarch of Śrīvijaya has been found at Kalasan in Central Java commemorating the building of a temple of Tārā (a Mahāyāna deity) in 778 A.D., in honour of the royal *guru*. A



BORABODUR
A Great Buddhist Tope
Courtesy: Mr. O. C. Gangoly

noteworthy feature is that the Kalasan inscription is not in the usual Pallava Grantha script of South India, but in North Indian characters, which Dr. R. G. Bhandarkar described in 1889 as almost exactly like those of a ninth century inscription found near Nālandā.

Some years ago I ventured to say that the first appearance of Mahāyāna doctrines in the Archipelago and the use of a North Indian script seemed to go hand in hand. I suggested then that both Mahāyānism and this script could have come only from the Pālas of Bengal and Magadha. All this has been confirmed now by recent discoveries. In the inscription of Kelurak (Central Java), written in the North Indian script, we are told that the Rājaguru, coming from Gauḍidvīpa (Bengal) to "purify with the holy dust of his feet" the Śailendra ruler of Central Java, consecrates the image of Mañjuśrī (782 A.D.). I may also refer in this connection to the Nālandā copper-plate of Devapāla, which mentions Balaputra, son of Tārā, daughter of Dharmasetu, the overlord of Suvarṇadvīpa (Sumatra), as the donor of a monastery at Nālandā.

Indeed, a Dutch scholar Dr. Stutterheim, after a close study of the inscriptions of the Śrīvijaya rulers in Java and of the Nālandā inscription, comes to the conclusion that it was after the marriage of Tārā, the daughter of King Dharmapāla of Bengal, with the Śailendra monarch who built the temple of Tārā at Kalasan, that Mahāyānism was first introduced into Java. Dr. Stutterheim also believes that the Pāla king Dharmapāla was the *guru* as well as the father-in-law of the Śrīvijaya ruler. This is far-fetched. We have already seen from the old Malay inscription of Śrīvijaya that Vajrayāna was already known in Sumatra in 684 A.D. It could have come only from Bengal visiting Java. Thus, without dragging in King Dharmapāla, we can point to Bengal as the source of the Mahāyāna and Tantrayāna cults in Java and Sumatra.

Borabodur, the most wonderful Buddhist *stūpa* in the world, was constructed by order of the Mahāyānist kings of Śrīvijaya. It is a whole hill carved into a *stūpa*. The wonderful bas-reliefs on the gallery walls are based on the *Lalita-Vistara*, and the Mahāyāna legends are presented in such a way by the artists as to give the faithful, while getting up from the lower to the upper galleries, the impression that they were also ascending spiritually. The plain unadorned work on the upper terraces is in striking contrast to the rich decoration so lavishly applied to the lower stories of the edifice.

By the latter half of the ninth century A.D. Central Java seems to have been won back from the Buddhist rulers of Śrīvijaya by Hindu princes. To this period belong the artistic reliefs depicting *Rāmāyaṇa* scenes on the walls of the Śiva temple at Prambanan. In the first scene the gods, led by a *ṛishi*, invoke Vishṇu, who is reclining on Śesha Nāga and drifting on the sea, to come to the help of suffering humanity oppressed by Rāvaṇa. The last scene is the building of the bridge. Probably the story was continued on the walls of the neighbouring Brahma temple, which is now in ruins. The Javanese artist does not always follow the *Rāmāyaṇa*—on several points he sticks to local Rāma legends. But nowhere else, whether in India, Cambodia, or Siam, are the exploits of Rāma depicted in so truly artistic a way. The Javanese, converted to Islam more than three centuries ago, still throng the temple with offerings of incense and flowers. Indeed the *Rāmāyaṇa* is still a living force in Java. For the Javanese masses even of to-day, Rāma and the Pāṇḍavas are national heroes born and brought up in the isle of Java! Puppet shows (*wayang* or shadow-show), representing scenes from the *Rāmāyaṇa* and the *Mahābhārata*, are still the most popular of entertainments, whether in the palaces of Javanese princes or in the humble abodes of the poor.

Early in the tenth century Central Java was deserted and the scene shifts to East Java. The great Erlangga, who was enthroned in 1035 A.D., is a romantic figure among the monarchs of East Java, and Kavi literatures flourished during his reign. The *Mahābhārata* and probably the *Rāmāyaṇa* also were rendered into Kavi. The kingdom of Kediri, a part of Erlangga's dominions, ruled by a branch of his family, was distinguished by a galaxy of brilliant poets who adorned the royal court. It was in Kediri in the first half of the twelfth century that important literary works in Kavi, *Kṛishṇāyana*, *Bhārata Yuddha*, etc., were composed.

Early in the thirteenth century this illustrious dynasty of Kediri succumbed to the machinations of a remarkable adventurer Ken Arok. This utterly unscrupulous person, with the help of a Brāhmaṇa who came from India to assist him in his infamous career, waded through blood to the throne of Singasari, which became the most powerful State in East Java in this period. The beautiful image of Prajñāpāramitā, one of the gems of Indo-Javanese sculpture, is probably the statue of Ken Arok's queen, a peerless beauty whose hand he won by methods of

blood and iron. The Javanese chronicle *Pararaton* gives us a brilliant pen-portrait of this monarch.

Kṛitanagara (1268-1292 A.D.), one of his successors, was an adept in Tāntrika practices (*pañcha-makāra* etc.) and was adored as Śiva-Buddha. His son-in-law Vijaya repulsed the Chinese troops sent by the Emperor Kublai Khan for the conquest of Java. Then he founded the kingdom of Majapahit (Javanese for *bilva-tikta* or bitter 'bel'). During the rule of his daughter, Jayavishṇuvardhani, and her son Hayam Wuruk, in the latter half of the fourteenth century, Majapahit became a mighty maritime empire ruling over all the islands in this region (Sumatra, Bali and portions of New Guinea, the Philippine Islands and Borneo) as well as places in the Malay Peninsula like Singapore and Kedah. There was a very powerful navy under able admirals (*jaladhi-mantrins*).

In the *Nagarakṛitāgama,* a chronicle composed by the court poet Prapañcha of King Hayam Wuruk, we have a glowing description of the capital Majapahit. A Mantrayāna text, *Kāmahāyanikan,* throws considerable light on the religion of this period—which was a curious blend of Śaiva and Buddhist doctrines, both highly tinged with Tāntrikism. Indeed the inscriptions of a Sumatran prince Ādityavarman of this period refer to mystic rites performed in *śmaśānas* (cremation grounds) and *chakra* ceremonies. All this reminds us of the Tantrayāna prevalent in Pāla Bengal.

The decline of Majapahit was very rapid during the fifteenth century. Meanwhile Islam was rapidly advancing in power in the Malay Peninsula and in the Archipelago. In 1513 Albuquerque still mentions a Hindu king as the suzerain of Java. Very soon after this the last Hindu ruler of Java was swept away by the rising tide of Muslim conquest. It is only in Bali that Hinduism still survives.

A SOUTHERLY WAVE OF HINDU CULTURE

I

In the evolution of our culture fancy has played no small part. Touched with the wand of imagination, verities that, expressed in purely abstract terms, would have appealed only to persons of intellect, have acquired fascination for even undeveloped minds. By weaving the sun's rays into the web of mortal existence, religion has been rendered so vital and vitalizing that it has driven every other impulse—every other passion—into a position of secondary (and, sometimes, of no) importance.

The process of giving a concept corporeality, dressing it in gay-hued garments and decking it with scintillating ornaments—of making objectivity the handmaiden of subjectivity—has facilitated the spread of our culture to other lands and among other peoples. Their fancy captured by our imagery has wandered into our thought-realm and finding sustenance through the senses for the soul, has chosen to dwell in that realm.

II

Here is a single illustration of the working of this process:

Woven into the fabric of our culture is the concept that a soul is given a tenement through which to realize the Soul of all (Paramātman) and, finally, to attain to complete bliss by absorption in that Soul. The world has its fascinations, however. It deflects the entity from its true course—makes it fly off, now at one tangent, again at another. Comes a time when it wearies of all this wandering—or, possibly, it is fortunate in meeting and receiving guidance from a nobler entity—goes back, not without travail, to the right path and eventually arrives at the ultimate destination and is absorbed in Paramātman.

To see the 'colourful' corporeality that our genius has given to this concept we must voyage (in imagination) to Ceylon—the Laṅkā of our fathers and of the Sinhalese of to-day.

III

Well below the point where the coast line begins to sag inwards, the Kālu-Gaṅgā (black—really brown—Gaṅgā) flings her two arms round the neck of Sāgara, known to geographers as the Indian Ocean. In her quest for her loved one she has rushed down from Malaya (the

lofty region that constitutes Ceylon's core) and has become roily with the copper-coloured earth over which she has run, hurling down barriers that stood in her way or, if they were beyond her strength, curving round them. Once she has embraced her beloved, all mud is washed from her and she ceases to be Kālu.

The scene is enchanting. Palms laden with golden-hued nuts rim the river-banks and the roadside. Their long, fern-like fronds, now gently stirred by the breeze and again thrashed by the rising wind, bend the shafts fired by Sūrya (the sun-god) and join them with shade in a bewitching pattern, wholly beyond the imitative skill of the most cunning craftsman to reproduce. Trillions of tender green paddy stalks sway backwards or forwards in obedience to the caprice of Vāyu (the wind-god), in fields edged with stout-barked trees bearing fruit half-hidden among the vividly tinted leaves. Here and there survives the bush with a multiplicity of branches that yield the cinnamon of commerce—a spice so prized in Europe before the discovery of the cold-storage process that it dragged to the Island men from many countries on that Continent, eager to secure the monopoly of that commodity. High above them grows, in spots, usually in isolated splendour, one or another variety of *ficus religiosa*, gracious in the gift of shade to the wayfarer driven by Sūrya to seek shelter.

IV

Over the two arms of the river bridges have been built to connect the islet with land to the north and to the south. A steady stream of foot and vehicular traffic flows over them from or towards a town of some importance—Kālutara, or the port of Kālu (Gaṅgā). This name is modern. In olden days the place was known as Velapuram—the *puram* (town) of the *vel* (javelin). Like a luminous finger-post set at the head of a lane otherwise lost in darkness, this name throws a search-light into a region filled with gloom. Round the spot upon which the settlement arose, a fierce battle raged, at a time beyond the ken of any historian, in which a javelin endowed with invincibility decided the issue.

This javelin was of miraculous origin—so the tradition goes. It was plucked by a goddess (Pārvatī) from her own person. Daughter of the Spirit of the Mountain (Menā) and the King of the Mountains (Himavat), she had been wooed and won by the god of gods—Śiva, lord over the forces of involution—forces dread in themselves but a prelude to rebirth—regeneration.

With this weapon she had armed a lad to whom she was deeply attached. Of mystic birth was he. Out of a spring welling up in Uttarākhaṇḍa (the abode of the gods in Northern India), five babes had emerged, fully formed as from a woman's womb. To suckle them milk flowed from the breasts of seven chaste mountain-maids (Kṛittikās).

Stirred by maternal ecstasy, the goddess gathered them up in her arms and pressed them to her breast with such force that their little bodies became stuck together. The five-faced child received the name of "Skanda" (joined together).

Grown to manhood, Skanda journeyed to the point where the two-armed Kālu-Gangā merges herself in the Indian Ocean. The region was then—millenniums ago—infested with the *devaśatrus*, enemies of the gods. So mighty was their chief that even the lord over cloud-land (Indra) did not dare to disobey his decrees. Vāyu was ever at work for him sweeping his palace; Agni keeping his kettles boiling; and Varuṇa (the water-god) irrigating his fields.

As Skanda neared the outskirts of that *asura's* kingdom he halted, to give him the opportunity to avoid bloodshed by ceasing to tyrannize over the gods. The demon was, however, vain of his resources, and contemptuously sent back the envoy bearing the message dictated by a fine sense of chivalry.

The combat took place along the banks of the Kālu-Gaṅgā. The *asura* could not withstand the might of the javelin-armed warrior from Uttarākhaṇḍa. The twin streams ran with blood and even the Ocean was tinged red.

V

After freeing the gods from the demon's tyranny, Skanda set his face southwards. He voyaged along the coast in a boat carved out of a block of stone, using his *vel* as a paddle. To the son of the most potent of gods, all things were possible.

When the craft touched Ceylon's most southerly point, he got out. Since it could serve him no further, it dropped of its own weight to the bottom of the sea.

Skanda had not proceeded many paces when he saw a jewel-encrusted gold finial over a temple and knew that he was in Devendrapuram, since corrupted into Dondra, some six degrees north of the Equator. He offered worship to Vishṇu—his father's compeer—enshrined there and continued his journey inland.

A little way beyond this sacred city he came upon a forest that seemed to stretch to the heart of the Island. Nature functioned there with amazing vigour. The tangle of undergrowth she produced was proof against intrusion except by beasts protected with hides specially created to resist the thrust of twig and the prick of thorn.

Supremely indifferent as to whether man saw her handiwork or not, or, if he did, what he thought of it, she went ahead with a decorative scheme of her own. She twisted round tree-trunks creepers that hung like huge jute ropes, uniting one with another in bonds of kinship. In places she variegated the effect by spreading over their limbs a closely woven network of leaf and blossom. She had at her choice an almost endless diversity of green tints, but only limited quantities of other hues. With a dab here and there of white or yellow or red, she produced a witching web.

Pushing his way into the inmost recesses of the jungle, Skanda came upon a glade through which meandered a tinkling brook, since known as the Māṇik-Gaṅgā. In summer, when the breeze, heated by the blazing sun, had acquired an insatiable thirst, it progressively shrank in size and a sheet of glistening, silvery sand stretched ever farther and farther on either side. Trees growing close to one another above dense brushwood, bent over it in a gallant endeavour to protect the pellucid water from the scorching rays of the fiery orb.

Beyond the glade, at either end of it, rose hillocks, of no great magnitude but gently moulded and gracefully curved, as if the Divine Potter's hand had lingered lovingly over them when he was rounding them out. The brown rock, strangely bare from base to top, showing, in places, through the haze of greenery, added a mystic touch to the scene of entrancing beauty.

Here and there in this jade Paradise water had collected in depressions. Before drought, with its hot, passionate breath, courted it, its surface was gay with a profusion of pink and white lotuses.

Above blossoms and through the branches, the wind soughed, sighed or shrieked, as, in sportive mood, it scaled its gamut of notes.

VI

While the war-god lay in the tree-shade near the bank of the Māṇik-Gaṅgā, more alseep than awake, in the entrancing yet reposeful atmosphere, his ear caught the lilt of a song. Somnolence took wings. He beheld, at some distance from him, a lovely lass grazing kine by the

rivulet's fringe. Believing herself unseen and unheard, she trilled with an abandon that sent a thrill through every cell of his thoroughly relaxed frame.

Noise made by a calf gamboling on the leaf-strewn sward made her look in the direction in which Skanda lay enthralled with her mien and music. Instantly she lost her heart to him. How could a mortal maid resist the dashing beauty of the war-god?

Followed a day of rapture for Valiamma—as the Ceylonese Tamils respectfully call the cow maiden—and her man, as she took Skanda to be. But as the *gomal* (time for the cows to return from grazing) came, she insisted upon quitting his side and returning to her people, who, she told him, lived in a clearing near-by and must be kept in ignorance of his presence, lest they should disapprove of their love and forbid it. No amount of coaxing could induce her to tarry after sun-down.

Her absence during the night made her lover all the more eager for the morn to appear. He would watch from the top of the hill commanding a view of the clearance until he saw her driving the cattle before her. Then he would dash down so as to be able to meet her the moment she entered the woods and the thick green curtain hid him and her securely from prying eyes.

VII

Love, unconsecrated by priest, no matter how discreetly made, cannot for long remain an inviolable secret. Some one from the settlement in the clearing chanced upon the twain in the glade. The news was carried to Valiamma's people. They were scandalized at her behaviour. Of a suspicious nature, they feared the worst and were ready enough to consent to the union. She and her man (as she continued to take him to be) appropriated, for their home, a cavern in the loftiest of the hills overlooking the stream. It is still to be seen by anyone who takes the trouble to clamber to the crest.

When the matter was reported to the *Rājā*, it transpired that Valiamma was no common cow-girl. She was, on the contrary, a princess of the blood royal—in fact, the only daughter of the chief of the Veddahs—the pre-Aryan and pre-Tamilian occupants of the Isle, believed, for lack of more exact information, to be the aborigines of the Island.

When her horoscope was cast immediately after her birth, men who claimed that their science (or was it only an art?) enabled them to peer

into the future, expressed dismay. They saw trouble for the baby girl and her family.

A youth would come from beyond the sea, they predicted, and she would find it impossible to resist his charms. She would thus be wrenched away from her people—lost to them irretrievably.

The Chief's counsellors soon concocted a scheme to cheat the Fates. So, at least, they claimed, in their overweening pride. They advised His Majesty to publish the news throughout his forest-kingdom that the infant had died, then to smuggle her out of the palace and have her brought up by a lowly but trusty couple as their own daughter.

The suitors who come a-courting to a palace, they pointed out, hanker for gold in addition to a fair bride. None of them would trouble to woo a princess disguised as a cow-girl.

All their precautions, however, proved useless. The Fates refused to be cheated. Skanda came. The moment she beheld him she was his, to do with as he liked.

Her lord, in turn, cared for her—rags and all. As if to confound the soothsayers, he did not evince the least desire to return with her to the land of his birth. Nor could he be persuaded even to reside with her, after her birth was acknowledged, in her father's palace, or in a resplendent mansion that the Chief offered to build for them. He loved the sylvan splendour spread about the stream where he had first met his wood-nymph far too well to be parted from it. With the cavern as their home, affording them wide views of the jungle stretching almost to the verge of the Bay of Bengal, they settled down to an idyllic life.

VIII

Meanwhile, back in India, the war-god's consort—Devaniamma (to use her Tamilized name), proud daughter of the *devas*—impatiently awaited Skanda's return. So did Pārvatī.

When news was carried to them of Skanda's infatuation for the Lańkānese lady, effort was made to remind him of his conjugal vows. Snowy-haired, shaggy-browed sages were sent upon that mission.

Prayers and protests were, however, in vain. Skanda could not bear to tear himself away from Valiamma's side even for a moment.

After a time a plenipotentiary from India succeeded in effecting a compromise. He induced the war-god to consent to spend a few weeks each year in India with Devaniamma, on the express condition that he

would be at perfect liberty to hasten back to Valiamma whenever he so desired.

IX

The past echoes through these traditions—the past that is inaudible to the historian with the acutest hearing. The muffled sound of footfalls of our adventurers to Ceylon's west coast is conveyed to our ears. Above that sound rises the clangour of resistance offered to them by people in possession of the soil marching towards that uplifted core from the hidden recesses of which the Kālu-Gaṅgā leaps into light and life. The noise of the clash of arms dies down and, in its stead, the strains of music that soothe the senses and sustain the soul are heard.

Not merely melody, but symphony. Elements that, unreconciled one to the other, might have produced discord are combined with consummate skill. The harmony evolved out of the indigenous (or, at any rate, pre-Hindu) notes blended with those brought from India rises heavenward and with it human nature that theretofore was too gross to soar.

THE REGIONAL AND LINGUISTIC STRUCTURE OF INDIA

Hinduism is the culture of Hindusthan, nothing more, nothing less. All the various sects of Hinduism, and all the religious systems that find shelter in its bosom, have this factor in common that each one of them accepts Hind (India) as its sacred land—the abode of its gods and goddesses, the country of its *tīrthas*, the land of its saints, heroes and martyrs, its *devabhūmi*, *puṇyabhūmi* and *karmabhūmi*.

Nature designed our country in a mood of poetry. The Himalayas and the cognate ranges make half its circumference; the other half is completed by the ocean. The vast country within these boundaries has four natural divisions: (1) the mountainous borderland, (2) the north Indian plain, (3) the Vindhyan system and (4) the Deccan.

THE INDO-GANGETIC PLAIN

The vast plain of Northern India stretching along the outskirts of the Himalayas and watered by two mighty river systems, of which the Indus and the Ganges are the leading members, forms the first and the most important natural division of our country. One of the most fertile plains on the earth, it is also one of those regions where man first experimented in domesticating animals and cultivating plants and civilization first manifested itself.

This cradle of Āryāvartic civilization, on account of its very fertility, must have been a vast expanse of primaeval forest when Aryan colonies first appeared in it like islands in a sea. Stories of the clearing of that original forest are still preserved in our most ancient tradition.

A narrow ridge of a mountain, on which now stands the central church of Simla, is, at one point in the Himalayas, all that divides the waters of the Jumna from those of the Sutlej. As the two rivers debouch into the plains, the *bāṅgar* (dry upland) of Kurukshetra leading into the wastes of Rajputana continues to divert them into different directions, splitting the great alluvial plain into two. This explains the strategical significance of Kurukshetra. Dividing this *bāṅgar* between the *khādar* (alluvial plain) of the Jumna and that of the Sutlej, the following six sub-divisions of the north Indian plain can easily be seen: (1) the valley of the lower Indus or the province of Sindh, with its northward extension, the narrow plain of Kachchī Gandāva which juts out wedge-like between

the Suleman and the Khirthar ranges, (2) the Punjab or the land of the five feeders of the Indus, (3) the upper Gangetic valley, where the course of the Ganges is south-east, (4) the middle Gangetic valley, where the river flows in an easterly direction, (5) the lower valleys of the Ganges and the Brahmaputra with the valley of the Surma projecting eastwards into the border-mountains, quite like Kachchī Gandāva at the other end of the plain, (6) the isolated upper valley of the Brahmaputra between the Himalayas and the Garo and Khasi hills.

THE VINDHYAN SYSTEM

As the Jumna and the Ganges proceed eastward, they are joined by a number of streams, draining the series of plateaus which buttress the great Gangetic plain on the south. These plateaus form the Vindhya-*mekhalā* (girdle) or the Vindhyan system, the southern boundary of which is indicated by the valley of the Tapti and the upper courses of the Vardha, the Venganga, the Mahanadi and the Brahmani. At its western extremity the Vindhyan system turns north-east in the form of the famous Ārāvalā (anglicized as Aravalli) range. The solitary valley of the Luni and the sources of the Suvarnarekha and the Damodar mark the western and eastern boundaries of the system.

The rivers Narmada and Sone, both originating in the heights of the Maikal range, and going in opposite directions, cut the Vindhyan system into two blocks. The northern block comprises the Ārāvalā range, the Malwa plateau and the Bhanrer, Panna and Kaimor ranges, while the southern is made up of the Satpura, the Gavilgarh, the Mahadev, the Maikal, the Hazaribag and the Rajmahal ranges. Hindu geographers of ancient India divided the whole system into three ranges. The western portion of the northern block, from which issue the rivers from Banas to Betwa, they called the Pāriyātra range; its eastern portion, which " gives birth to " the rivers Dhasan, Kiyan (Ken), Tons, etc., and touches the Ganges at Chunar was the Vindhya proper; while the whole of the southern block which is drained by the rivers Tapti, Venganga, Mahanadi and Baitarani was their Ṛiksha range.[1]

The soft alluvial plain of Gujarat is a part neither of Northern India nor of the South, while it has been intimately connected with the Vindhyan system. Rich with the sea-borne trade of its ports, it has often been

[1] *Vāyu Purāṇa* (Ānandāśrama) I. xlv. 97-103; *Vishṇu Purāṇa* (Jīvānanda) II. iii. 10-11; *Mārk. Pur.* (Jīvānanda) LVII. 19-25. There is much confusion in the texts, and the conclusion has been arrived at after a careful collation and analysis. See my *Bhāratabhūmi* (Agra, 1988), pp. 63-64, n.

protected from the northern conquerers by the Vindhyan barrier. Of the Vindhyan system proper, eastward from Gujarat, the following territorial divisions are to be marked: (1) Rajputana, that is, the country around the Arāvalā and to the west of the Chambal, including the desert to its west, called Thar in Sindhi and Ḍhāṭ in Rajasthani; (2) the *pathār* or plateau of Malwa, comprising the upper Chambal and Sindh valleys, the middle Narmada valley and the eastern portion of the Satpura range up to Burhanpur; (3) Bundelkhand-*cum*-Gondwana, comprising the valleys of the Betwa, the Dhasan and the Kiyan, the upper Narmada valley and the Ṛiksha range from Pachmarhi to Amarkantak, with the river Tons as its eastern boundary; (4) Baghelkhand-*cum*-Chhattisgarh, *i.e.* the valley of the Sone where it flows from west to east, and the upper Mahanadi valley overlooked by Mt. Amarkantak; (5) Jharkhand or Chhota Nagpur, *i.e.* the easternmost portion of the Vindhyan system up to Mt. Pārasnāth.

The plateau of Ranchi, forming the southern portion of Chhota Nagpur, is connected by a narrow neck with the hills of Mayurbhanj and Kendujhar (mis-spelt in English as Keonjhar) wherein lie the sources of the river Baitarani. As the Baitarani was considered to spring from the Ṛiksha range, these hills, according to the notion of Hindu geographers, belonged to that range. The moderns take them as part of the Eastern Ghats.

THE DECCAN

The triangular country to the south of the Vindhyas is the Deccan. It is a plateau, buttressed on all sides by ranges of hills, and sloping eastwards, as is evident from the course of its rivers. Its two sides are fringed by fertile plains forming the coasts. The western coast is extremely narrow, with an average breadth of forty miles. It is called Konkan in its northern portion, where the high peaks of the Sahyādri or the Western Ghats rise abruptly above it to great heights. The Sahyādri range runs southwards in an unbroken chain up to the Nilgiri, rising in its southern course and throwing a number of long arms eastwards, which form the watersheds between the different streams of the Godavari and the Krishna systems.

The so-called Eastern Ghats do not form a continuous range like the Sahyādri. It consists of at least two members: Mahendra and Malaya. The Mahendra range comprises all the hills between the Mahanadi and

the Godavari. The whole system to the south of the Krishna would seem to have been included in the Malaya range, *malaya* being a Sanskritized form of the Dravidian *malai*, meaning a mountain. The northernmost portion of the system is the Nallamalai or Śrī Parvata washed by the Krishna to its north and the N. Pennar (Vaḍa-Painnāra) to its south. The middle portion begins to the south of the latter river and running south-west ends in the Nilgiri plateau, where it effects a junction with the Sahyādri. The third portion rises after the gap of Palghat and runs right up to the Cape Kumārī (Comorin). These trans-Kaveri Malayas, viz. the Anamalai and the Elamalai (Cardamom hills) seem to have been the Malaya proper.[1] Hindu geographers counted four Malayas, the fourth being the mountain of Ceylon.[2] Whether the other three correspond with the portions just referred to, I cannot at present say. But that the Malaya was also considered to be one range is apparent from the *Vāyu Purāṇa*.[3]

Here the mountains of the Indian peninsula are enumerated in the traditional Indian way, viz. starting from the east and proceeding southward, etc. Of the seven ranges mentioned, one, viz. the Śuktimān, still remains unidentified. I have proposed[4] its identification with the plateau of the river Musi, which is the only mountainous system isolated from the three ranges covering the whole of Southern India, viz. the Mahendra, the Malaya and the Sahya, and which fits in the order of enumeration followed in the *śloka* as lying between the Sahya and the Ṛiksha ranges. It is to be noted that the list of the *kula-parvatas* does not include the Himalaya and its cognate systems, which have been distinguished from the former as *maryādā-parvatas, i.e.* the border-mountains.[5]

The peninsular India with its three (or, if we include the Śuktimān, four) mountain ranges may be divided into the following territorial units: (1) the valley of the Mahanadi and the territory around the Mahendra range; (2) the lower valleys and deltas of the Godavari and the Krishna along with the Musi plateau and the district of the Nallamalai hills; (3) the catchment-area of the Godavari up to its junction with the Venganga and of the upper Krishna, *i.e.* the whole area of the eastern ridges of the Sahyādri plus the Vardha-Venganga *doāb*; (4) the synclinal plateau

[1] *Raghuvaṁśa* IV. 51.

[2] *Kāvyamīmāṁsā* (G.O.S. 1916), p. 93.

[3] I. xlv. 88.

[4] *Bhāratabhūmi*, pp. 318 ff.

[5] *Mārk. Pur.* liv. 26; *Śrīmadbhāgavata* (Venkateśvara) V. xvi. 6-10; *Bhāratabhūmi*, p. 25.

of Mysore between the southern Sahyādri and the Malaya range; (5) the east coast to the south of the Vaḍa-Painnāra along the spurs of the Malaya range, plus the entire country to the south of Palghat; and (6) the island of Ceylon which is a part of India.

The middle Krishna valley divides South India into two halves. Couped up between the eastern ridges of Sahyādri, the Mysore plateau, the Nallamalai hills and the Musi plateau, the Krishna at its junction with the Tungabhadra finds its course almost obstructed, and cuts a passage to the sea forming a deep gorge along the Nallamalai range, known as the Pātālagangā. These valleys of the twin rivers are the Kurukshetra of Southern India. Looked at from this point of view, Mahārāshṭra is its Afghanistan and the Tamil coast, its Gangetic valley.

THE HIMALAYA AND ITS COGNATE RANGES

Our northern borderland is formed by the Himalaya. The term is specifically used for that chain of high mountains, the highest in the world and covered with eternal snow, which begins with the Nanga Parvat in the west and whose further course eastward is represented by such altitudes as Nunkun, Bandarpunchh, Kedarnath, Nandadevi, Dhaulgiri, Gosainthan, Gauri-Sankar, Everest, Kanchanjangha and Chumlari. The range has the shape of a sword with its hilt towards the west. Its western boundary is the Indus and its eastern boundary is generally taken to be the Brahmaputra. But the high line of altitude by which it is characterized does not extend eastward so far as the Brahmaputra; it comes to a close to the west of the Subansiri.

From the plain of Northern India to this snow-line we are led by two smaller ranges running parallel to the great Himalaya range throughout its course and acting as its steps. These are the lesser Himalaya and the sub-Himalaya ranges, the former exemplified by such mountains as the Harmuk and the Pir-Pantsal in Kashmir, the Dhauladhar in Kangra, the Nag Tibba in Garhwal and the Mahabharat range in Nepal, and the latter by the Sivalak (Sewalik) hills, the Ḍunḍwa and the Churiachauki ranges. The idea of the three parallel ranges is common knowledge in our Himalayan districts. In our ancient literature they are styled *antargiri, bahirgiri* and *upagiri*.[1] There are a number of ranges supporting the Himalaya on the northern side. In our ancient termi-

[1] *Mahābhārata* (Kumbhakonam) II. xxviii. 3; *Bhāratabhūmi*, p. 311. *Vide* also my *Bhāratīya Itihāsa kī Rūparekhā* (Allahabad, 1933), p. 1065.

nology, we may call these the *avashṭambhagiris*[1] of the Himalaya. The most important of these have been christened in modern terminology as the Ladakh and the Kailas ranges and run parallel to the Himalaya almost along its whole course. The former arising towards the right of the Indus and of the Gilgit, and crossing the Indus twice, runs along its right bank in the district of Ladakh, dividing its waters from those of its tributary, the Shyok, then again crossing it at its junction with the Gartang, and allowing a passage to the Sutlej (properly, Satlaj), flanks the valley of the Brahmaputra along its right bank, until it joins the Himalaya at Chumlari. It forms the watershed between the Brahmaputra and the upper tributaries of the Ghaghra, the Gandak and the Kosi. The Kailas range has received its name from Mt. Kailas which is its central figure. It runs along the north of the Brahmaputra and of the Indus after its junction with the Gartang, and is crossed by the Shyok. There is yet another range of mountains between the Himalaya and the Ladakh range, running from the river Zanskar (a southern tributary of the Indus) up to the Ghaghra, where it joins the Himalaya. It has been named the Zanskar range. It acts as a watershed between the Indus and the Sutlej, and between the latter and the Ganges. The sources of the Ganges are in it, and Mt. Kamet is a member of this range. The famous valley of Badarikāśram lies at the foot of this range on the other side of the Himalaya. The Himalaya with the Ladakh and Kailas ranges forms the southern bulwark of Tsang-Thang, the great plateau of Tibet, which is shouldered on its northern side by the Kiun Lun. At its western end the two sets of mountains are drawn near each other, and the Karakoram range with its mighty glaciers comes in between the two. The Karakoram with the Hindukush also makes the southern bulwark of the Pamirs. The Raskam Darya, the river Sitā of the ancient Hindus, is the dividing line between the Karakoram and the Kiun Lun as also between the plateaus of Tibet and the Pamirs.

Where is the boundary line between India and Tibet? The sources of the Ganges, according to Indian tradition, mark the northern boundary of India.[2] According to modern conception, the sources of the Ganges are in the Zanskar range. Taking this range as simply a repetition of the great Himalayan range, we may take the latter as, broadly speaking, the northern border line of our country.

[1] *Śrīmadbhāgavata* V. xvi. 11.
[2] *Vāyu Purāṇa* I. xlv. 81.

THE HIMALAYAN VALLEYS

The Himalaya encloses within its ranges some of the most picturesque valleys of the world, which we shall now briefly survey:

A. THE KASHMIR GROUP

Below Nanga Parvat, and between the Indus and the Krishnaganga-Jhelam (properly, Jehlam), the westernmost district of the Himalaya, is Hazara, the Uraśā of the Sanskrit classics.

The circuitous upper valley of the Vyath, the Kashmiri name of the Vitasta or Jhelam, is the famous vale of Kashmir. From the great Himalaya, beyond the sources of the Krishnaganga, sprouts a lesser range which proceeding westward finally turns south, dividing all the way the waters of the Krishnaganga from those of the Vyath. These are the Harmuk (Haramukuṭa) and Kajnag mountains. Another range marked by Mt. Amarnath branches off from the great Himalaya a little further east, proceeds due south and encircling the sources of the Vyath turns north-west, where it is called the Pir Pantsal range (Pañchāladhārā). These mountains of the lesser Himalaya surround the valley of Kashmir on all sides, making it a paradise on earth.

The valley of Krishnaganga to the north of the Harmuk range and at the foot of the great Himalaya is not included in Kashmir proper. It is a part of Daradadeśa, of which we shall speak later.

The Amarnath range is drained on its eastern side by the river Maruvardvan, the Vedic Marudvṛidhā, which joins the Chinab at Kashtwar (Kāsṭhavāṭa). Both Maruvardvan and Kashtwar valleys are Kashmirian in race and language.

The sub-mountainous country between the Jhelam and the Chinab is the ancient Abhisāra, and between the latter river and the Ravi, Dārva, Dārvābhisāra is a famous group in our classics. Abhisāra is now called Chhibhal and includes Punch (Parṇotsā), Rajauri (Rājapurī) and Bhimbhar States. The modern name for Dārva is Dugar, the home of the sturdy Dogras, and its capital is Jammu. Above Dugar country is the western end of Dhauladhar, another range of the lesser Himalaya. Between Dugar and Kashtwar, to the north of Dhauladhar, is the valley of Bhadrava (Bhadrāvakāśa), the easternmost district of Kashmir.

B. KANGRA TO KANAUR

The Dhauladhar range is the central figure in the second group of Himalayan valleys. Sprouting from the great Himalaya to the left of

the Sutlej at the source of the Tons, it runs up to the Chinab, allowing the Sutlej, the Byas and the Ravi to cut gorges through it. The sub-mountainous country below it and between the rivers Ravi and Byas is Kangra, which along with the Sutlej-Byas *doāb* formed the ancient Trigarta country. The upper fringe of the *doāb* consists of two parallel ranges of low hills, the Sivalak and the Solasingi, whose valleys make the district of Hoshiarpur, and the State of Bilaspur (alias Kahlur), as also the State of Nalgarh to the left of the Sutlej. Between the Solasingi and the Dhauladhar the valley of the Byas is called Mandi, and that of the Sutlej, Suket.

The upper valleys of the Chinab and the Ravi lie between the Dhauladhar and the great Himalaya. The Chinab above Kashtwar is still known by its Sanskrit name Chandrabhāgā. Its valley as also the valleys of its two original contributaries, the Bhāgā and the Chandrā, make the territories of Pangi and Lahul. The upper valley of the Ravi is Chamba.

From the source of the Chandrā at Bara-Lacha pass, the great Himalayan range runs almost due south, like a sword bending beyond its hilt, until it reaches the gorge of the Sutlej. ...

In its lap, at the sources of the Byas, lies the valley of Kullu. The other side of the Himalayan range here is drained by the river Spiti, whose left is all along flanked by the Zanskar range. The Spiti valley opens in the upper valley of the Sutlej, called Kanaur, which, as I have shown elsewhere, is the ancient Kinnaradeśa.[1] The lower boundary of Kanaur is Dhauladhar, and the upper, the Zanskar range, while the great Himalayan range runs across it.

From Kashmir to Kanaur, along the Indian border on the other side of the Himalaya, in the valley of the Indus are Tibetan districts—Ladakh, Zanskar, Rupshu, Hanle, Chumurti and Guge. Guge is the westernmost of the three districts of Nari, the province with Mt. Kailas and Manasarovar in its centre, which runs along the Indian border eastwards up to the north of Muktinath.

C. KYONTHAL TO KUMAUN

Below Kanuar, between the Sutlej and the Tons, are four small territories: Kyonthal, Jubbal, Baghat and Sarmaur. By Kyonthal we

[1] *Bhāratabhūmi*, pp. 305-8; Proceedings of the sixth Indian Oriental Conference, pp. 111 ff; and *Bhāratiya Itihāsa ki Rūparekhā*, pp. 1060-63, where the discussion will be found in its latest form.

mean the territory of the Kyonthali dialect, and so on. The city of Simla is the centre of Kyonthal. The highlands beyond the Tons are known as Jaunsar-Bawar; amongst the sub-Himalayan valleys below them, that of Dehra-Dun is the most famous.

Further east, the whole territory drained by the tributaries of the Ganges, from the Bhagirathi to the Pindar, is Garhwal. It is the most hallowed of all of India's sacred lands, and contains some of our holiest *tirthas*. The main stream of the Ganges is not Bhagirathi, but Alakananda, and at each of its junctions with other streams there is a Prayāga. Going upstream along this series of Prayāgas, one reaches Joshimath in the heart of the great Himalayan range, where the twin original contributaries of the sacred river, Vishnuganga and Dhauliganga, unite their crystal waters. At the head of the valley of Vishnuganga is situated Badarikāśram.

To the east of Garhwal is Kumaun or Kūrmāchala. It comprises the valleys of the Ramganga and its tributary, the Kosi, as also the valley of the Sarju which flows into the Kali. Mts. Trisula, Dunagiri and Nandadevi form its crown. It is a district of picturesque lakes, and through it lies the direct route to Mt. Kailas and the Manasa Lake. In the beauty of its scenery, the fertility of its soil and the intelligence of its sons, it is quite a match for Kashmir.

D. NEPAL

The catchment-area of the Ghaghra in the Himalaya adjoins that of the Ganges. The river Kali or Sarada, a tributary of the Ghaghra, forms the dividing line between Kumaun and the State of Nepal. From this line up to Mt. Dhaulgiri is the western one-quarter of that State which they call Baisi, *i.e.* the district of twenty-two *rājās*. It is all traversed by the main streams of the Ghaghra. From Dhaulgiri up to Gosainthan is the catchment-area of the Gandak, which the Nepalese call Saptagandaki. It contains such important places as Palpa and Gorkha, the latter of which has given its name to the race that now rules the State. The various streams of the Ghaghra and the Gandak have their sources beyond the Himalaya in the Ladakh range. In the trans-Himalayan valley of the Kali-Gandak is situated the *tirtha* of Muktinath, which is considered as sacred as Amarnath in Kashmir, or Kedarnath and Badrinath in Garhwal.

Beyond the Saptagandaki is the valley of Nepal proper with its three ancient towns of Kathmandu, Bhatgaon and Patan. It is the valley of

a minor river Bagmati, with its two tributaries, the Vishnumati and the Manohara, which effect their junction here. Like Kashmir, it is a small plain surrounded by high mountains on all sides, but its area is only one-fifth of that of Kashmir.

The easternmost district of the State of Nepal, up to Mt. Kanchanjangha, is Saptakauśikī, *i.e.* the catchment-area of the river Kosi. Like the Ghaghra and the Gandak, the Kosi also has its sources beyond the Himalaya, and the valleys of its streams lead up to the Tsang province of Tibet, which runs along the Indian border to the east of Nari.

E. THE EASTERN SECTION

The Himalaya east of Kanchanjangha is drained into the Brahmaputra. And the great Himalayan range here bends a little northward in the manner of the edge of a sword. The valley of the Tista, immediately adjoining Saptakauśikī to its east, is Sikkim. At its lower end is Darjeeling, the Dorje-ling or thunderbolt *doāb* of the Tibetans. Further east, the valleys of the rivers Torsa (Amochhū), Raidak (Chinchhū), Sankosh and Manas, all originating in the great Himalayan range, are included in the State of Bhutan. Great military and commercial significance attaches to the valley of the Torsa, also called Ḍomo (anglicized as Chumbi) valley, as through it runs the modern highway to Lhasa and Shigartse. It leads to a point below the Himalayan range, just opposite which from the other side descends the river Nyang, whose valley is commanded by the town of Gyantse. From Gyantse, there are routes for Shigartse and Lhasa. The ancient highroads to Tibet run along the Trisuli-Gandak and Sun-Kosi.

In the upper valley of the Sankosh, is situated Punakha, the capital of Bhutan. The valley of the easternmost tributary of the Manas is Towang or Monyul. Beyond Towang are tribal territories of four Tibeto-Burman people: (1) Akas or Ankas, (2) Daflas, (3) Miris, who inhabit the Subansiri valley, and Abors, who dwell along the southern course of the Brahmaputra, and with Miris form one tribe, and (4) the Mishmis who live in the valley of the Lohit.

THE NORTH-EASTERN FRONTIER

From the left of the Subansiri, a range of mountains hangs over the plain of Assam as it stretches eastwards up to the Lohit. From the east of the Lohit valley, an arm of this range extends south-west; this is the Namkiu range. The Patkoi Hills and the Naga Hills are but an

extension of the same system, encircling the valley of Assam on three sides. Between the Naga Hills of the border and the Khasi Hills of the interior, there is a descent marked by the valleys of the rivers Kapili and Dhanasiri. Our border-line runs along the spurs of the Namkiu, Patkoi and Naga ranges, penetrates the hills of Manipur to a distance, and then proceeding along the Lushai and Chatgaon (Chittagong) Hills touches the sea. The Indian language and race have penetrated to some extent into the hills of Manipur, Tripura and Chatgaon. Otherwise, there are no Indian territories inside the mountains of the north-east border, whose western slopes form our boundary line.

THE NORTH-WESTERN FRONTIER

A. DARADA COUNTRY AND BOLOR

We fixed the northern boundary of India along the snow-line of the Himalaya. With reference, however, to the westernmost portion of the range, we have got to modify that statement.

At the extreme west of the great Himalayan range, rises Mt. Nanga Parvat. Going along the anticlinal of the Himalaya eastwards, we reach, forty miles before the next eminence, Mt. Nunkun, a sudden fall. This is Zojila or Zoji Pass,[1] a great geographical and ethnic landmark. It is from here that the Harmuk range forming the northern border-line of Kashmir branches off from the great Himalaya; it is at this point again that the south-eastern boundary of the Darada country meets the south-western boundary of Tibet.

The Daradas (anglicized into Dard) are an Indian race, speaking an Aryan language and inhabiting this land from time immemorial. The province of Kashmir is itself Dardic, *i.e.* its race and language belong to the Dardic branch of the Aryan family, and Dardic influence has been traced in the whole of north-western India as well as in the Himalaya excepting its easternmost section. We have seen that the Krishnaganga valley at the foot of the great Himalayan range belongs to Darada, but the Darada settlements extend far beyond to the Indus valley across the Himalayan and Ladakh ranges, and to the Gilgit and Hunja valleys across the Indus. It follows that the northern boundary line of India does not proceed along the summit of the great Himalayan range beyond Zojila. From that point, the present boundary line of Darada country goes north-east up to Khaltse, in the *doāb* of the Indus and the Shyok, whence it turns westward along the Ladakh range. To its north, between

[1] *Lā* in Tibetan means a pass.

the Ladakh and Kailas ranges, is Bolor or Balti—the Lukh Butun or Little Tibet of the Kashmiris. Encircling it along its southern and western sides, our boundary line again turns due north opposite the fort of Bunji in the first southern bend of the Indus, and crossing the river, ascends the Hunja valley until it strikes the eastern edge of the Hindukush at Taghdumbash Pamir. It then proceeds westwards along the Hindukush to include the valleys of Yasin, Mastuch and Gilgit.

Bolor is now Tibetan in speech, but Dardic in race.[1] The Tibetans occupied it in the eighth century of the Christian era, when it was wholly Indian.

The old boundary line of Daradistan, it would seem, went right into the Shyok valley, and mounting Karakoram Pass descended along the valley of the Sita until it touched Taghdumbash Pamir. The latter is the meeting-point of three great mountain ranges. The Hindukush here joins its eastern edge with the western edge of the Karakoram, and from this point the meridional range of Sarikol proceeds northwards.

B: THE WESTERN GĀNDHĀRA, KASHKAR AND KAPIŚA

Parallel to the Indus, to the west of it, run the rivers Swat (Suvāstu), Panjkora (Gauri) and Kunar, tributaries of the river Kabul. Their lower valleys form the western half of the ancient country of Gāndhāra, the eastern half lying below Uraśā between the Indus and the Jhelam. The Darada country and Gāndhāra are thus links between the cis-Indus and the trans-Indus Indian territories. The valleys of the Indus, Swat and Panjkora higher up are called Kohistan; that of the Kunar, Chitral or Kashkar. This may be our ancient Kāraskara country.[2] Just above Chitral in the Hindukush range is Dorah Pass. From Dorah westward along the axis of the Hindukush up to Khawak Pass and from the Kunar westward up to the river Alishang, bounded towards the south by the river Kabul, is the country of modern Kafiristan, the ancient Kapiśa, whose capital Kāpiśī was famous in our ancient history since the age of Pāṇini. The valley of the Alishang's junction with the Kabul is Lamghan, the ancient Lampāka, a district of Kapiśa.

C. THE PAMIRS AND BADAKSHAN

Parallel to the Sarikol, all along its eastern course, is another range, Kandar or Kashgar. This system of twofold meridional ranges is the axis of the plateau of the Pamirs, and is drained eastward into the Tarim

[1] Francke: "A Language-Map of West Tibet," J.A.S.B. lxxiii, pt. 1, pp. 362 ff.
[2] *Proc.* sixth Ind. Oriental Conference, pp. 106-7; *Bhāratabhūmi*, p. 316.

and westward into the Oxus. The valleys of the various streams of the two rivers, especially of the latter, descending in tortuous slopes through picturesque scenery from the top of the Sarikol, are called Pamirs. The eastern boundary of the system is the river Sita, and the western, the great northward bend of the Oxus or Ab-i-Panja, as it is called here. Just a little before the northern end of this northward bend, a stream called Aksu or Aksab joins the Ab-i-Panja, as does another stream with the name of Waksh a little lower down. The name Waksh is reminiscent of the Sanskrit name of the river, Vaṅkshu. There are other streams and valleys also which retain the name, e.g. Wakhan, Ab-i-Wakhan, and Pamir-i-Wakhan. It was in the *doāb* of the Wakshab and the Aksab, the Haittal of the Persians and the Khuttal of Arab geographers, that Kālidāsa made Raghu defeat the Hūṇas.

The Pamirs are inhabited by an Aryan race, the Tajiks, who have held their own in spite of centuries of Hunic, Turkish and Mongol invasions. The language they speak is called Ghalcha. Their northern boundary is just the same *doāb* of the Aksu and the Waksh.

To the west of the Pamirs, in the great bend of the Oxus, along the northern slopes of the Hindukush, and to the east of the river Kunduz is the country of Badakshan. West of Badakshan in the same system is Balkh, the Bākhdhī or Bākhtrī of the ancient Iranians, the Vāhlika of our own classics. Badakshan is quite like the Pamirs in natural scenery and is inhabited by the same race. I have shown it elsewhere that Pamir-Badakshan is the Kāmboja *janapada* of our forefathers,[1] who knew the country since the later Vedic age. Kāmboja-Vāhlika is a familiar group in the *Mahābhārata*, and Gāndhāra-Kāmboja in the *Pali Canon*. In the second century B.C. and later, an Aryan tribe from the Tarim valley, the Tukharas, invaded Kāmboja, and gave it their name. Badakshan has till recently been known as Tukharistan, which appellation included countries so far away as Bolor. Balkh or Vāhlika, though one of the most ancient Aryan countries, has now turned Turkish in speech.

D. THE AFGHAN COUNTRY

From Taghdumbash Pamir, the Hindukush range goes in a south-west direction up to Bamian, west of Kabul. Practically, the same range extends westwards as far as Herat, under the name of Koh-i-Baba and Band-i-Baba. The Hindukush-Band-i-Baba system is the pivot of the

[1] *Proc.* sixth *Ind. Orient. Conf.*, pp. 102 ff.; *Bhāratabhūmi*, pp. 297 ff.; *Bhāratīya Itihāsa kī Rūparekhā*, pp. 470 ff. (latest discussion).

Afghan plateau. It is the Uparishaena of the ancient Iranians, the Paropanisus of the Greeks.

Where the Hindukush joins its shoulders with Kohi-i-Baba, a great watershed is formed. From this key-point in the Afghan plateau, the Kabul, the Helmand, the Harirud and the Kunduz take their waters in different directions. Not far from its source, the Kabul is joined by another stream, the Panjshir, springing up from a side of the same watershed. It is formed of two small streams, the Ghorband and the Panjshir, both coming from opposite directions along the spurs of the Hindukush, and making a junction at Charikar. The source of the Ghorband almost approaches that of the Bamian, whose valley indicates the western end of the Hindukush, and is not itself far removed from the source of the Kabul. The Bamian is a small stream joining the Surkhab. The latter with the Andarab washes the very same ridges of the Hindukush towards the north whose southern face is washed by the Ghorband and the Panjshir. It pours its waters into the Kunduz, to be led finally into the Oxus. It is evident that the most convenient highways from the Oxus basin over the Hindukush into India are those which ascend the mountain from the valleys of the Andarab, the Surkhab and the Bamian and descend into those of the Panjshir, the Ghorband and the Kabul. This watershed between the Oxus and the Indus systems is thus the neck of the Afghan plateau.

Going westward, the Koh-i-Baba throws a number of long ridges towards the south-west, which form watersheds between the various streams of the Helmand, and between that river and the Farahrud. Next in importance to the Uparishaena range, and within the circuit formed by that range and its southern ridges, is Mt. Safed Koh, which also has extended its two arms in the same direction in the same manner. The longer one of these serves as watershed between the Helmand and the Indus. The small but significant Khwaja-Amaran range between Kandahar and Quetta is also in line with these ridges.

There is a third system of mountains making the south-eastern fringe of the Afghan hinterland. The Suleman, with the parallel Shinghar range at its back and the Toba-Kakar range still further west, is a triple system, which encloses a large district within its fold, forming the apex of the triangle of the Afghan plateau. The Suleman and the Shinghar, after running a long distance north to south, end in south-westerly curves. The Toba and Kakar range has a s.w.w. direction from the very start. The triple system, however, does not make any important watershed—a

number of streams either cut through or make a detour of it to bring their quotas into the Indus.

To the north of the Band-i-Baba, parallel to it and acting like its steps, are lower ranges—Koh-i-Changar in the eastern section and Band-i-Turkistan in the west. Within them and the slopes of the Band-i-Baba are formed synclinal plateaus—the western one being the famous Firozkohi, or Karjistan. Towards the slopes of Koh-i-Changar is another such plateau, whose northern edge is Mt. Elburz. The slopes of Band-i-Turkistan are formed by the sand-hills of Chol. Below Elburz and Chol are the alluvial plains of the Tashkurghan, the Balkh and the Oxus.

The highroad running along the spurs of the Afghan hills that joins Herat to Kandahar and Kandahar to Bolan Pass, marks the south-western boundary of the Afghan hinterland. Its eastern boundary line also goes along the spurs of hills until it reaches the north of Safed Koh. Its northern boundary is indicated by the northern slopes of the Safed Koh, the upper valley of the river Kabul beyond its junction with the Alishang, and of its tributary, the Panjshir, and across the Hindukush, the northern edge-line of the plateaus towards the slopes of the Band-i-Baba. Large districts of the real Afghan country are now included in the British provinces of Balochistan and the North-western Frontier Province. On the other hand, the present independent State of Afghanistan includes the territory of Sistan, which may well belong to Iran. This point, however, we may consider later, when we come to discuss the ethnic aspect of the issue.

E. KALAT AND LAS BELA

To the south of the Khwaja-Amran and Bolan Pass, are Kalat highlands, from whose southern edge the Khirthar and Halar ranges extend towards the sea. Within these ranges are the valleys of three parallel rivers flowing north to south—the Hab, the Purali and the Hingol, which form small alluvial plains at their mouths. The valley of the Purali with its chief city Bela is called Las Bela. In the valley of the Hingol is the ancient *tirtha* Hingulāja,[1] still visited by Hindu pilgrims from Karachi.

These highlands and valleys are now included in the province of Balochistan, which is a misleading name. The real home of the Baloch race lies westward. The question will be considered fully in a later

[1] *Devībhāgavata P.* (Vaṅgavāsī Press) VII. xxviii. 6; *Brahmavaivarta P.* (Jīvānanda), *Kṛishṇa-janma-khaṇḍa*, lxxvi. 21.

section. The traditional boundary line of our country runs from Khwaja-Amran along the western slopes of the Kalat upland and the Hingol valley to Ras (cape) Malan, where it strikes the sea.

THE JANAPADAS OR NATION-LANDS

We have so far been surveying the territories of India mainly from a geographical point of view, *i.e.* how nature has designed them. For a proper understanding of our country, however, we have also to consider the nations that inhabited these territories and made them their own, and how their settlements affected them.

The Indian people, as we find them to-day, are composed mainly of two races, the Aryan and the Dravidian, with a flavour of two minor races, the so-called Austric and the Tibeto-Burman. Out of every hundred persons of real India as delimited above, about seventy-six speak an Aryan, and about twenty-one a Dravidian language. Of the remaining three per cent. a little less than half speak an "Austric" and a little more than half a Tibeto-Burman tongue. Language is not always a reliable criterion of race; still the preponderance or otherwise of a race's language in a country is certainly an index of its influence.

Chief amongst the Indian communities belonging to the "Austric" race are the Santhals, the Mundas, the Śabaras—all inhabiting scattered jungle-tracts of the eastern Vindhyas, the Khasis of the Khasi Hills, and the Nicobarese of the Nicobar or Nakkavāra Islands. They have no large continuous tracts belonging exclusively to them, and no literary language.

The Sanskrit word *kirāta* is an exact synonym of the modern Tibeto-Burman.[1] The Kiratas or Tibeto-Burmans belong to our northern and north-eastern frontier tracts. The Himalayan valleys east of Sikkim are exclusively peopled by them; these valleys are only geographically a part of India. Large numbers of Kirata people, however, have been absorbed in the population of eastern India and speak some Aryan language, Bengali or Assamese.

All the literary languages current in India to-day are either Aryan or Dravidian. The whole of Northern India, north-western and north-eastern portions of the Deccan, and Ceylon are Aryan in speech. About a dozen cognate languages are spoken in this large tract. The rest of the Deccan is divided between four major Dravidian languages: Tamil, Telugu, Kannaḍa and Malayalam. All the languages of India, whether

[1] *Bhāratabhūmi*, p. 267.

Aryan or Dravidian, use one and the same alphabet (except that some languages of the north-west have adopted the Persian characters as well). The Indian alphabet is Aryan in origin, and has also been adopted by languages outside India such as Tibetan, Burmese and Siamese. The vocabularies of the Dravidian as well as these Greater-Indian languages also have been strongly influenced by Sanskrit and Pali. Apparently, it was due to the efforts of the Aryan settlers in these lands that their speeches were first reduced to writing.

The race that has most impressed India's history and civilization is the Aryan. The Āryas entered India in the third millennium B.C. and made this country their home—Āryāvarta or the abode of the Āryas. Their social organization at the time was tribal; they were divided amongst a number of tribes or *janas*, as they called them. A history of the expansion of these tribes and their gradual occupation of the whole of Northern India as also a part of the Deccan has been traced from the records preserved in our Purāṇas. The territory in which a *jana* had settled came to be known as its *janapada*, and as time went on, birth or domicile in a *janapada* began to be considered a greater bond than the original kinship of the tribe. Thus out of the original *janas* or tribes were evolved *janapadas* or nations, the tribal State or *jāna-rājya*, as they called it, giving place to *jānapada-rājya* or national territorial State. By amalgamation, conquest and other means, some of the original *janapadas* later developed into *mahā-janapadas*, and we hear of sixteen of such great nations in the age of the Buddha. There followed a period of a *chāturanta-rājya*, a kingdom embracing the four ends of India, viz. the all-India empire of the Mauryas extending from Kāmboja to the frontiers of the Tamil land. By this time the Aryanization of the whole of India including Ceylon had been complete, and the Indian colonization of Further India and Serindia began. Though Āryas had grafted their colonies in the South, Āryāvarta or North India was still considered more sacred. By the third century of the Christian era, however, after the repeated waves of Aryan immigration had inundated the South, the whole of India, as Bhāratavarsha, came to be considered a sacred land coveted of the gods, and Bhāratī *prajā* or Indian people and not the Āryas alone, the leading people of the earth.[1] The Kaveri became as sacred as the Ganges, and Kāñchī became a rival of Benares and Ayodhyā.

[1] *History of India* (150 A.D. to 350 A.D.) by K. P. Jayaswal (Lahore, 1933), pp. 154, 202.

Throughout this period, and up to the close of the ancient age, *c.* 540 A.C., though the ideal of an all-India empire and a feeling to regard all Āryas or Indians as one people were always there, and the struggle for empire incessant, the *janapada*-patriotism continued to remain strong and active, and the love of the different nationals for their own *janapadas* acute. In the Maurya period, decrying another's *janapada* was a cause for libel.[1]

However, from a later point of view, even the *mahā-janapadas* of the sixth century B.C. comprised small areas. "The ancients were not great conquerors," declared an author of the seventh century A.C., "for in a small area of land they had a number of kings."[2] By the close of the ancient age, however, the *janapadas* had grown sufficiently in size, and in the Middle Ages they came to be almost what we find them to-day.

The linguistic survey of India has revealed a very interesting fact. The areas of Indian dialects and languages as they are found to-day correspond in a striking manner with the ancient or mediaeval *janapadas*, or *janapada-saṅghātas* (federations of *janapadas*). To take an example, we have a famous group of *janapadas*, viz. Kurukshetra, Matsya, Pañchāla and Śūrasena, described in the *Manusmṛiti*[3] (*c.* 150 B.C.). Now, of these *janapadas*, Kurukshetra corresponds to the area of modern Bangarū dialect, Matsya to that of Mewati and Ahirwati, north Pañchāla to that of Khari Boli, south Pañchāla to that of Kanauji, and Śūrasena to that of Braja-bhakha, the aggregate representing the area of modern western Hindi language minus that of one of its dialects, Bundeli, *i.e.* the whole area of western Hindi so far as it lies in the North Indian plain. This shows a survival of India's nation-units through the long periods of her national paralysis and political dependency. And with the new revival of our age, there are signs of the self-consciousness of those nation-units reasserting itself and finding a new expression. You cannot call them simply "linguistic provinces." They are not provinces, but nation-lands, corresponding in most cases, but not always, to linguistic divisions. Each of them, again, has most probably evolved its own ethnic type born out of the mixture of the Aryan and Dravidian and other minor races in varying proportions. They have grown out of

[1] *Bhāratīya Itihāsa kī Rūparekhā*, pp. 487-91, 631-38, 971-87; where all earlier authorities have been cited and discussed.

[2] *Harshacharita* (Nirṇayasāgara, Second edition, 1897), p. 213.

[3] II. 17-19.

the whole history of India. You cannot have a true idea of India's past history and culture without a proper understanding of these members of Indian federation. The regeneration and future development of our country are indissolubly bound with the self-realization of these *janapadas*. It is, therefore, necessary both for the student of Indian history and culture and for the statesman working for India's welfare to have an accurate conception of India's nation-lands.

THE FIVE INDIES OR NATIONAL ZONES OF INDIA

We have considered the four natural divisions of our country and their sub-divisions. Our forefathers had a system of dividing the country into five zones, and for an ethnic and linguistic survey of it—for a study of its races and nations—that classification is very useful. Rājaśekhara (*c.* 900 A.C.) calls these divisions the five *sthalas* of India[1]; they are the five Indies of the Chinese pilgrim Yuan Chwang (Hiuen Tsang); all the *digvijayas* (conquests) described by our classical poets are arranged according to this fivefold division. In fact, this grouping of all of India's nations in five zones is a fundamental idea throughout our past history. The provincial distribution of the Maurya Empire conformed to these zones, and in the Śātavāhana (200 B.C.—200 A.C.) and later periods the political powers struggling for supremacy were often identified with particular zones.[2]

The five zones are: Madhyadeśa or the middle country, the East, the South, the West and the North. According to the Buddhist *Vinaya* (third century B.C.) Madhyadeśa extended from Thanesar in the west to the town of Kajangala (modern Kankjol in Santhal Perganas) and the river Salilavatī (the Salai of Chhota Nagpur) in the east, and from the Himalaya to the river Narmada. Patañjali (*c.* 170 B.C.) following ancient *Dharmasūtras*, fixes Kālakavana or the black forest (of Santhal Parganas) as the eastern limit of Madhyadeśa. Later, however, this boundary was shifted to Prayāga or Benares, and Bihar was included in the East. The westernmost dialect of the Bhojpuri language of western Bihar is still styled *Purbi*, as the *pūrva* or the east of the Madhyadeśa people begins with the area of that dialect. On the other hand, the modern Nepalese, with whom *madhes* and *madhesiā* (an inhabitant of the middle country) are still terms of daily use, include the whole of Bihar in the middle country. The western limit of Madhyadeśa was, according

[1] *Kāvyamīmāṁsā*, pp. 93-94.
[2] *Bhāratīya Itihāsa kī Rūparekhā*, pp. 558-60, 705-6, 743, 845-47.

to Patañjali and *Dharmasūtras*, Vinaśana or Adarśa, *i.e.* the place where the Saraswati disappears in the desert. Rājaśekhara defines the western countries as those to the west of Devasabha, a place not yet identified, but most probably in the longitude of Vinaśana, *i.e.* 74° 50′ E. The Uttarāpatha or the north is defined by the same author as the country to the north of Pṛithūdaka, *i.e.* the modern Pihowa on the Sarsuti, which is 29° 58′ N. If we interpret 'north of Pṛithūdaka' as north of the latitude 30°, the meaning of this classification would be much clearer. For the countries to the west of 74° 50′ E, if they are to the north of the 30° N, will be included in Uttarāpatha, and so the countries to the east of Benares and north of the 30° N. The countries which we now call north-western were thus always styled as northern by our forefathers.

THE HINDI ZONE

What was Madhyadeśa or Madhyamaṇḍala of the ancients is roughly the Hindi Zone of our days. With the exception of Bengal and Assam in the east, and Gujarat, Sindh, and the Punjab in the west and north-west, all the provinces of the North Indian plain and of the Vindhyan system, as also the Himalayan districts from Chamba to Kumaun, have accepted Hindi as their language of education, literature and culture. Now, this central zone is roughly the same as the Madhyadeśa of our forefathers.

To the modern student of Indian linguistics, Hindi is a very inconvenient term. It is derived from *Hindavi*—a term by which the Mohammedan foreigner meant the language of the Hindus or Indians. But all Indians did not speak one language, and the term *Hindavī* might have signified a number of speeches different from each other, so long as their difference was not marked. But the confusion is not only a confusion of terms, to the scientist it appears to be a confusion of practice as well; here he finds himself confronted with a situation which is difficult to explain. Bihar or the area of the Bihari speech is one nation-land; for whether Bihari is to be considered a variety of Hindi or not, there is no questioning the fact that the three dialects of Bihari, viz. Bhojpuri, Magahi and Maithili, are intimately connected *inter se*, and form one group. Bhojpuri is the speech of the ancient Malla and Kāśī *janapadas*, Magahi that of ancient Magadha, and Maithili of ancient Mithila or Tirhut as also of the ancient Aṅga country, *i.e.* Munger (Monghyr) and Bhagalpur. Originally these dialects were confined to the districts of the Gangetic plain only, but in the mediaeval and modern ages, they have extended southwards into

the Vindhyan valleys and annexed practically the whole of Chhota Nagpur. From Gaya Magahi has extended southward and taken possession of the northern one of the two plateaus of Chhota Nagpur, *i.e.* Hazaribag. And from Shahabad, by way of Palamu (Palamau), Bhojpuri has extended to the southern of the two plateaus, *i.e.* Ranchi. A number of aboriginal "Austric" or Dravidian speeches in that hilly region have thus been submerged in this flood of Aryan languages and surrounded like islands. The easternmost portion of the Hindi country both in the Gangetic valley and in the Vindhyan system thus forms the land of Bihar. It is to be noted that about half the area of the Bhojpuri dialect is now under the jurisdiction of the so-called United Provinces.

There is another large land in the Hindi zone whose speech is taken as a variety of Hindi by the ordinary educated people of North India, but which the philologist has marked as a separate language. This is Rajasthan, the land of the Rajasthani language, *i.e.* roughly what is Rajputana to-day plus Malwa. Of the dialects which have been labelled as Bhili, on account of some features common to all of them, the majority belong to the groups Mewari and Malvi, and a few to Gujarati. The two former groups have to be included in Rajasthan.

Deducting Bihar and Rajasthan and leaving aside the Himalayan valleys, the rest of the Hindi zone belongs to two languages, which have been called western Hindi and eastern Hindi. The former has five dialects: Bangaru, Khari Boli, Braja-bhakha, Kanauji and Bundeli; while the latter has three: Avadhi, Bagheli and Chhattisgarhi. The dialects Mewati and Ahirvati are formed by a mixture of Braja-bhakha and Bangaru respectively, with Rajasthani. The names western and eastern Hindi would indicate as if the speeches were dialects of one language. Far from it; as the study of Indian linguistics has disclosed, they are not only different languages but belong to different sub-branches of the Indo-Aryan branch of the family of Aryan languages. The western Hindi along with Rajasthani, Punjabi and Gujarati, makes the central group of the inner sub-branch (the only other group in the sub-branch being that of Pahari languages of the Himalaya), while the eastern Hindi is a sub-branch by itself—the mediate sub-branch. The Indo-Aryan languages of further east, west and north-west belong to the outer sub-branch. The name eastern Hindi is being applied to the language for want of a better name. We can avoid this confusion if we restrict the name Hindi to what is called western Hindi now, and find another name for the language of Avadh and Chhattisgarh. As both

Avadh and Chhattisgarh had the ancient name Kośala, let us call this language Kośali.

The literary dialect of Hindi is Khari Boli. As a vernacular, it is the speech of Meraṭh (Meerut) and Rohilkhand divisions and of Ambala district—the ancient north Pañchāla and Srughna countries. It is this dialect which claims to have received to-day the proud position of India's national language, and which is the language of education and culture not only in the areas of adjoining languages like Rajasthani and Kośali, but also in distant lands like Bihar. From a practical point of view, this is an important fact. For this shows that all the observations of the linguist notwithstanding, the practical difference of these speeches from one another is very small.

From a geographical point of view, Avadh and Allahabad, *i.e.* territories of the Avadhi dialect, have more in common with the upper Ganga-Jumna *doāb* than with Baghelkhand and Chhatisgarh; and similarly the upper *doāb* is more intimately connected with Avadh and Allahabad than with Bundelkhand. Bundelkhand, Baghelkhand, Chhatisgarh and Gondwana are all comparatively modern names denoting different parts of the ancient land of Chedi, which we may now define as the territory of the dialects Bundeli, Bagheli and Chhattisgarhi. It comes to this that, combining the areas of the two languages Hindi and Kośali into one, and taking out of it all that comes within the Vindhyan system, we have the land of Chedi. The rest is also one land, which has been the heart of India throughout its history, and which is commonly known as Hindusthan, when that word is used in its narrow sense. We may now define it as the land covering the areas of the dialects Bangaru, Khari Boli, Braja-bhakha, Kanauji and Avadhi. The Mewati-Ahirvati area may now go with Rajasthan, as both the dialects have a Rajasthani base. To avoid the confusion which may be caused by the use of the word Hindusthan in this narrow sense, we may call it by another significant name, which originally belonged to its major part, and which is still a living name—Antarvedi (vernacular form, Antarved). Rājaśekhara, quoting earlier authorities, defines Antarvedi as the land "from Vinaśana to Prayāga and between the Ganges and the Jumna."[1]

Evidently the last sentence is not to be taken literally, as Vinaśana is a long way to the west of the Ganga-Jumna *doāb*. It simply means the valleys of the twin rivers.

[1] *Op. Cit.*, p. 94.

Avadh, in the opinion of many, should not be included in Antarved. If so, Allahabad, Baghelkhand and Chhattisgarh should go with it, the whole area of Kośali forming one unit. Avadhi and Bagheli are really one dialect, bearing two names in two territories.

Let it be noted that the two lands, Antarved and Chedi (or the three, Antarved, Bundelkhand and Kośala) include between them almost the whole of the present U. P., less the Bhojpuri area, the whole of the Central India Agency except portions which belong to Rajasthani, and the Central Provinces minus its Marathi-speaking districts. Besides, Ambala division of the Punjab, less Kharar and Ropar tahsils of Ambala district, with the contiguous parts of the Phulkian States, Patiala, Nabha and Jind, belongs to Antarved.

THE EASTERN ZONE

The eastern zone has three nation-lands: Orissa, Bengal and Assam. Orissa is the area of Oriya language and Bengal, of Bengali.

The boundaries of Orissa have of late been the subject of much discussion. An important error of outlook has been conspicuous in these discussions, and has so far gone without a protest. Most of the disputed borders of Orissa are peopled by aboriginal communities, Dravidian or Munda. None of these, however, can form a large continuous independent nation-land. Their territories are being absorbed in the civilized Aryan or Dravidian languages near about them. While computing the percentage of Oriya-speaking population in any disputed area, the claims of Oriya are to be measured only against the neighbouring civilized languages, *i.e.* Bengali, Bihari, Kośali, Marathi and Telugu. The nation-land of Orissa includes, besides Orissa division of the province of Bihar and Orissa, Singhbum district (minus Dalbhum sub-division) of Chhota Nagpur, a portion of Medinipur (Midnapur) district, a portion of Raipur district of the Central Provinces, and the States lying between Raipur and Orissa division, Ganjam district, Jaipur agency of Vizagapatam and the north-east portion of Bastar.

The only point to be noted with reference to Bengali is that a number of Bengali-speaking districts are not included in the present province of Bengal. They are, in Chhota Nagpur, Dalbhum sub-division of Singhbhum district and Manbhum district minus Jharia-Dhanbad area; in Bihar, the eastern portion of Santhal Parganas, and the portion of Purnea district which is to the east of the Mahananda; in Assam, the western portion of Goalpara district and the Surma Valley, *i.e.* the districts of

Srihatta (Sylhet) and Kachhar (Cachar). The Garo Hills, though inhabited by a Tibeto-Burman community, the Badas, are surrounded by the Bengali language, and hence they are to be included in Bengal.

From the scientific point of view the Assamese language is nothing but a dialect of Bengali. It belongs to the valley of the Brahmaputra. The southern and south-eastern borders of that valley are inhabited by the Lohitic or Assam-Burmese branch of the Kirata race. Formerly the whole of north-eastern India belonged to them, but now Bengali and Assemese have thrust two big wedges into the valleys of Surma and Brahmaputra, isolating and cutting off from their base a number of Kirata tracts, such as Garo Hills, the Bada-speaking population of Goalpara and Kamrup districts which in 1921 numbered two per cent. of the total, Majuli island in Sibsagar, and Madhupur forest on the borders of Dacca and Mymensingh. There are other tracts on the border which the two Aryan languages have penetrated, but which have not been completely encircled by them. Thus Bengali has penetrated into Tripura (Tippera) Hills, and a dialect of Assamese in Manipur. The total number of Lohitic speakers within the geographical borders of India was 15.50 lakhs in 1921. Of them about one quarter belonged to Bengal and the rest to Assam. The total number of Assamese-speaking people was in the same year 17.27 lakhs.

THE SOUTHERN ZONE

The southern zone has six nation-lands; five belonging to the peninsula and being the areas of Marathi, Telugu, Kannaḍa, Tamil and Malayalam, and the sixth the island of Simhala or Ceylon. The northern part of Ceylon is Tamil-speaking, the language of the rest is Sinhalese. Marathi and Sinhalese are Aryan languages, the other four languages belong to the Dravidian family. The areas of these languages roughly conform to the natural divisions of the country noted above. Marathi occupies a triangle in the north-western part of the peninsula. Towards north-east, where its border runs along those of Mālavi (Rajasthani), Bundeli (Hindi), Chhattisgarhi (Kośali), and Oriya, there has been much obscurity owing to the presence of the aboriginal Gondi. In the greater portion of the State of Bastar, within the *ḍoāb* of the Indravati and the Sabari, is spoken a dialect named Halabi, which was virtually an orphan till recently. The Marathas considered it a dialect of Chhatisgarhi, and the Chhatisgarhis called it a dialect of Marathi. Sir George Grierson, the Director of the Linguistic Survey of India, found it to be a mixture of

the two, with a Marathi base. To its north-east in the same State is another dialect, Bhatri, which has been found to have an Oriya base, though owing to its nearness to Marathi it is written in Nagari characters. The boundaries of Chedi, Mahārāshṭra, Orissa and Andhra have thus been found to be contiguous to each other, and there is now no aboriginal speech holding any independent buffer tract between.

The areas of Andhra or Telangana, Karnataka, Tamilnad and Kerala are marked by the extents of their languages which are well known, Tulunad and Kodugu ('Coorg') being parts of Karnataka, as these speeches are dialects of Canarese, and Lakkadiven or Laccadive islands going with Kerala. The whole of the State of Mysore falls within the boundaries of Karnataka. The State of Hyderabad is a most unnatural phenomenon, holding within it portions of three nation-lands, Mahārāshṭra, Karnataka and Telangana, on all of which it tries to impose a language belonging to none.

The geographical and historical unity of the Island of Ceylon is such that in spite of its northern portion being Tamil in speech, it is one country. Minikoi and Maladiven or Maldive Islands are Sinhalese in speech and hence belong to Ceylon.

THE WESTERN ZONE

Rajputana having been included in Hindi zone, only two lands remain in the western zone. These are Gujarat and Sindh, the lands of Gujarati and Sindhi languages. Kachchh, between the two, is more intimately connected with Gujarat than with Sindh. Its speech is a mixture of Gujarati and Sindhi, but with a Sindhi base. Still the Kachchhis have adopted Gujarati as their language of education and culture. The reason for it is rather interesting to note. Sindhi was reduced to writing only about seventy years ago. There was a discussion at the time as to which characters it should be written in. Sindhi Brāhmins were familiar with Nagari characters, and they used, and still use, Nagari characters for their language. But the Amil community of Sindh, who, as their name indicates, formed the class from which government servants were chiefly recruited, and, by the bye, are one of the most intellectual and enlightened communities of India, were accustomed to Persian, and owing to their partiality for it, Arabic script came to be adopted for the language. Arabic-Sindhi as it is called now is the court language as well as the language of education in the province. But the adoption of Arabic script cut off Sindh not only from Kachchh but from

the whole tradition of Indian literature. It has become an intellectual desert isolated from the past and present literary life of the rest of India. It is no wonder that study of Sanskrit is almost unknown in Sindh, and the highly intellectual communities of the land have not produced a single eminent student of its own history during the last seventy years. Sindhi literature has not developed beyond the elementary stage.

To return to our subject of enquiry, we have to note that the real land of Sindh is bigger than the present province bearing that name. A dialect of Sindhi called Lāsi is spoken in the valley of Purali beyond the Khirthar, which forms the State of Las Bela. Similarly, Kachchi Gandāva, though now included in Balochistan, is geographically, ethnically and historically a part of Sindh. We shall consider the matter more fully in connection with the border lands.

THE NORTH-WESTERN ZONE

We have only one land in the plains of the north-western zone—the Punjab or the land of the five rivers. The modern linguistic surveyors of India have found two languages in the Punjab—the eastern one they call Punjabi, which they count in the inner sub-branch of the Indo-Aryan languages; the western one they have found to belong to the outer sub-branch, and to be more akin to Sindhi than to Punjabi. This modern language of the home of Pāṇini, Kauṭilya and Vasubandhu has no literature whatsoever, and an English missionary, forty years ago, christened it as Lanhda. The word, which literally means "in the process of descending or setting," and hence the direction of the setting sun, *i.e.* the west, was symbolically applied in English to denote the language of the western Punjab; it has been blindly copied by Indian authors since then. Had they cared to look into its import, they would have found it a most ridiculous appellation for a language. The present writer, whose mother-tongue it is, has proposed to call the language Hindki, a name borne by four out of its five dialects, and which really means the language of Sindhu country, *i.e.* of the middle Indus valley.[1]

In spite of this scientific distinction about the languages of the Punjab, the unity of the land, geographically, ethnically and historically, is beyond question. And the two languages, though belonging to different sub-branches, altogether shade off so imperceptibly into each other that it is extremely difficult to find their boundary line. This has been explained as due to the presence of a Dardic element in both of them. The Punjab

[1] *Bhāratabhūmi*, pp. 219-21.

is then the land of both Punjabi and Hindki, the trans-Indus districts now included in the North-west Frontier Province belonging, since the Vedic age, to the Punjab. And Ambala division, tacked on to the eastern border of the present province of Punjab, has (except the tahsils Kharar and Ropar) no organic connection with it. Of the mountainous tracts adjoining the land, we shall speak presently.

THE LANDS OF THE BORDER MOUNTAINS

A. THE WESTERN ZONE—LAS BELA, KALAT, BALOCHISTAN

At the western extremity of the India of the British lies the province of Balochistan. The name would suggest that it is the land of the Baloch race. From that point of view the province is an artificial creation bearing a delusive name. For its north-eastern portion—Quetta, Zhob and Loralai—is geographically, ethnically, linguistically and historically, a part of the Afghan plateau. It is the cradle of the Pathan race and the home of its purest and noblest stock. The western portion of the southern half of the so-called Balochistan is really the land of the Baloch, but that is not the whole of it, its major portion lying in Iran. It is to the west of the Hingol, the traditional boundary of India, and hence we have not considered it as a part of India. The Balochs came into this country from Kurdistan in the eleventh century A.C., and in the sixteenth they crossed the borders of India and passing over the valleys of the Hingol, the Purali and the Hab and the highlands of Kalat, settled down on the borders of the Punjab and Sindh. The flood of the Baloch emigration having passed over, Las Bela and Kalat still remain what they were. Las Bela is the home of Lasi Rajputs and Jats, whose language is Sindhi. The Balochi-speaking population in the State numbered less than one-third in 1921. Kalat is the land of the Brahui, a race presenting a peculiar phenomenon in this part of our country. They speak a Dravidian language, which, like Gondi, is without any literature. Their territory is small and barren, with a density of population from 1 to 15 per cent. per square mile. And being mostly nomadic, the Brahuis in large numbers winter in Sindh. They cannot form a separate nation-land. Kalat may be an adjunct to the land of Sindh, which encircles it on two sides.

We have yet to consider the problem of the Baloch population settled on the borders of the Punjab and Sindh. Cut off by Kalat highlands from their home, they are fast being absorbed in the autochthonous Sindhis and Hindkis. Being Aryan by race, they have not effected any

change in the ethnic texture of the two lands. Their principal settlement now is in the strip of country extending from Bolan Pass *via* Sibi and Kachchi Gandāva to the southern end of Suleman and Shīnghar ranges, which is known after the names of their tribes as Marri and Bugti country. Bolan is a part of Kalat, and in 1921 its Balochi population outnumbered the Brahui by a small majority. The number of Sindhi speakers in Kachchi Gandāva was more than double that of the Balochi speakers. Midway between the two, in Sibi, the Balochi speakers formed the majority. And from Sibi eastward, Marri and Bugti country is exclusively a Baloch tract. It is the real Balochistan on this side of our border. But its population is nomadic, with a density of 5 to 10 per square mile. To their north, along the western border of the Suleman range, Barkhan tahsil of the British Balochistan is peopled by the Hindki-speaking Khetrans. Along the Suleman range, on the borders of Dera-Ghazi-Khan and Dera-Ismail-Khan districts, there has been a Baloch strip separating the area of Hindki from that of Pashto. It is, however, fast being absorbed in Hindki. In the southern portion of Kulachi tahsil of Dera-Ismail-Khan, there were a number of Balochi-speakers in 1901. By 1911, however, they had all adopted Hindki.

B. THE NORTH-WESTERN ZONE

(i) The Afghan country:

Bolan and Sibi are the traditional southern boundaries of the Afghan country. The districts of Quetta-Pishin, Loralai and Zhob in the present province of Balochistan, and the tribal areas known as Waziristan, Kurram, Afridi-Tirah, and Mohamand country in the North-west Frontier Province form really British Afghanistan. The Afghans as a race are a link between India and Iran, and so is their country. In history, however, they have been connected more with India than with Iran—the Pakthas or Pathans were one of the tribes that opposed the passage of the Ṛig-Vedic king Sudas on the Ravi.[1] The upper valley of the Helmand and the Hindukush range have throughout ancient and mediaeval history been taken as the beginning of India. The Afghans speak a language called Pashto or Pakhto. They do not call themselves Afghans, but Pashtans or Pakhtans, from which has been derived our word Pathan. The word Afghan we find first used by Varāhamihira (sixth century A.C.) in the form Avagāṇa.[2] But whether

[1] *Ṛig-Veda* VII. 18. 7.

[2] *Bṛhatsaṁhitā* XI. 61; XVI. 37.

the word means simply a Pathan, or denotes all the people of Afghanistan, is not clear. For Afghanistan is not inhabited by Pathans alone. The Pashto language occupies only the southern and the eastern portion of the country. The population of Afghanistan includes other people also, chief among whom are Tajiks. They speak either a dialect of Persian or Ghalchā, and the Pathans call them Parsiwans. The Tajiks or Parsiwans are the descendants of the ancient Kāmbojas and Tukharas. The races other than the Pathans and the Parsiwans who inhabit Afghanistan, such as the descendants of the Huns, the Turks and the Mongols who invaded the country at various times, are temporary disturbing factors. They are being absorbed in the two principal races of the land, and should not confuse our vision. To a Pathan, Afghanistan is the land of Pathans and Parsiwans. I define it as the Paktha-Kāmboja country, the land of the Pathans, Kāmbojas and Tukharas—races which in history have been most intimately connected with India.

Sistan, the ancient Śakasthāna, is not a part of real Paktha-Kāmboja country; it belongs to Iran. Herat is the common factor between Iran and Afghanistan, having greater connection with the former. Balkh has now become Turkish in population and speech. But with Ferozkohi to its south, Afghanistan has an ancient connection. A large part of the Kāmboja (Ghalchā) country in Pamirs is now included in U.S.S.R. The province of Kafiristan now included in the Afghan kingdom is not an organic part of the Afghan country. To the south of Lamghan, in the valley of the Kabul, between the river and the spurs of the Safed Koh is a small tract now known as Ningrahar. It is the ancient Nagarahāra, and has greater connections with Kafiristan or Kapiśa than with the Afghan land. A number of Afghan tribes emigrated into the ancient (western) Gandhara country to the north of Kabul, and even ino Hazara to the east of the Indus in the sixteenth century A.C. But these lands have very ancient connections with the Punjab.

(ii) Kapiśa-Kashmir:

The dialects of Kafiristan, Chitral, Kohistan, Dardistan and Kashmir make one branch of the Aryan family—the Dardic. Kashmiri is its only member which has a literature. Their tracts form one contiguous land, Kashmir being connected with Kafiristan through Kohistan and Kāshkār.

(iii) The Punjab's portion:

The present district of Hazara with the lower valley of Krishnaganga formed the Sarkar of Pakhli in Moghal times. The tract belongs to the Punjab, its language being Hindki. The same is the case with the ancient Dārvābhisāra, the language of Abhisāra, modern Chhibhal, being Hindki, and that of Dārva, modern Dugar, Punjabi. The Punjab further includes in its tract Kangra, to the east of which it just penetrates into higher mountains. Its upper boundary further proceeds to include Hoshiarpur, Kahlur and, to the east of the Sutlej, Nalgarh, whence it advances to strike the source of the Ghagghar, and turns along that river in the plains. The sub-mountainous country below Mundi, Suket, Kyonthal and Baghat thus forms part of the Punjab.

C. THE MIDDLE ZONE

The middle zone in the Himalaya extends eastwards from Chamba to the eastern boundary of Nepal State. The language of these tracts is Pahāri—a member of the inner sub-branch, very much akin to Rajasthani. The dialects belonging to countries from Chamba to Jaunsar make western Pahari, those of Garhwal and Kumaun, middle Pahari, and those of Nepal, eastern Pahari. Excepting the Gorakhali language of Nepal, also called Parvatiya and Khaskura, none of these speeches is used as the medium of education, that service being everywhere entrusted to Hindi, as in Rajasthan, Kośala and Bihar.

The valley of Nepal and the Saptakauśikī tract to its east came under the Gorkha rule late in the eighteenth century. The State of Nepal, as at present constituted, contains a number of autochthonous Kirata communities, the most important and civilized among them being the Newars of Nepal valley proper. The Gorkhas have fast unified the whole State, imposing their language upon it. The Newar men have all become bilingual, and their women understand Parvatiya, if they cannot speak it. And the Gorkha population and language are fast invading the neighbouring Sikkim, which is virtually becoming a part of Nepal.

The Gorkhas, before 1814, had brought under their rule all the Himalayan districts from Sikkim to the border of Kangra. They all really form one land, having unity of language and uniformity of life.

D. THE EASTERN ZONE

The Himalayan districts to the east of Sikkim—Domo valley, Bhutan and the north-Assam tribal territories—are all Tibetan. They belong to Lhokhā or the southern province of Tibet. Only geographically, they are part of India.



PILGRIMAGE AND FAIRS: THEIR BEARING ON INDIAN LIFE

Pilgrimage to sacred places forms an important item of the spiritual discipline of the people of almost all religions in the world. The followers of every religion look upon certain places as specially holy, and it is the ambition of their life to visit those places at least once in their lifetime. What places are considered holy and why so, depends on the temperament of the people of different religions; but there is no religion, the followers of which do not consider particular places with particular associations as the springs of inspiration in their religious life. What doubt is there that if a Buddhist goes to Bodh-Gaya and sees the seat under the Bo-tree where Buddha attained *nirvana*, his imagination will be stirred up and his thoughts will soar above all worldly things and give him an impetus to aspire after the highest goal of human life? A Christian devotee, visiting Jerusalem, will find his love for Christ much more deepened; for all the incidents of the life of Jesus associated with that place will be strongly recalled to [illegible]ind. In fact any man belonging to any religion, on visiting [illegible]s, will find a new current of thought rushing to his [illegible]lue of which will not be negligible.

Though people of every religion have got their particular places of pilgrimage, it may perhaps be said without any fear of contradiction that the Hindus have to their credit the largest number of such holy places. From the Himalayas to Cape Comorin and from Dwarka to Kamrup, there are thousands of places which are considered sacred by the people of all India without distinction of caste or creed. And if a devotee makes a tour through the country on foot, every three hours he is likely to find himself in a place which will stimulate his religious feelings. India being essentially a religious country, it is no wonder that every care has been taken from hoary antiquity to keep ablaze the fire of spiritual consciousness in the minds of the people through these means. It would indeed be difficult to trace the cause of importance of many holy places round which have grown innumerable legends and traditions with the weaving of ages. But this may be said as a general rule that every place ever considered holy was found to have something associated with it, which was likely to serve as an incentive to religious feelings.

GIRISA

By Nandalal Bose

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It is really a striking phenomenon that, of all places, the Himalayan region has been considered most suitable for spiritual practices in all ages. In its silent retreats anybody will find his thoughts automatically composed, and free from worldly cares and anxieties; and that may be one of the reasons why the Uttarākhaṇḍa has been covered with a network of prominent places of pilgrimage from time immemorial. We find one temple at Badrinarayan, another at Kedarnath, a cave at Amarnath, and so on, which draw crowds of pilgrims every year from all parts of India. The Lord Himself says in the *Gītā*, "Of the mountains I am the Himalayas." Attracted by their inspiring grandeur, many people from time immemorial have been resorting to their caves and forest retreats to solve the riddle of life. This in fact is the abode of Śiva. What a multitude of sacred associations is there in the name of the Himalayas! Why is India so very religious? One replied: Because India has got the Himalayas. Take away the Himalayas and the Ganges, and the religious history of India dwindles into insignificance. As with the Himalayas, so with the Ganges. Innumerable saints and sages have performed austerities on her banks and attained realization, and this has made her holy in the eyes of the Hindus. Countless are the people who, beginning from the Vedic age right up to the present time, have actually realized Truth on her sacred banks. So it is that the Ganges has got the largest number of *tīrthas* on her banks, compared with any other river in the whole of India.

There are persons who consider pilgrimage in India to be the result of the animistic colouring of the popular mind, and thereby try to minimize the importance of the places of pilgrimage. But a deeper reflection belies the above assumption and makes it clear that it is the natural beauty of particular places and the religious inspiration which they give that have rendered them holy in the eyes of the pilgrims. Indeed the spiritual genius of the Indians has never failed to utilize every place of fascinating beauty and grandeur as a perennial source of inspiration affording supreme peace and consolation to the care-worn hearts of the people. Cape Comorin, the beauty-spot at the southernmost end of India—where the land merges in the vast, infinite ocean, has become the favourite seat of the Divine Maiden. Similarly, the majestic beauty of Ellora has made it a holy place century after century, and the Hindus, Buddhists and Jains all alike have been attracted by it. Indeed the beauty of a place is to the Indian mind a call to the soul from God. Sister Nivedita has rightly observed that quite different would have been

the valuation of Niagara by humanity if it had been situated on the Ganges. Instead of fashionable picnics and railway pleasure-trips, there would have been an unceasing onrush of worshipping crowds from the different parts of India; magnificent sanctuaries would have adorned the place and commanded the homage of millions of pilgrims, instead of its mighty forces being harnessed to the chariot of human utility, and people would have rushed to the place to satisfy their spiritual hunger. This fact alone clearly demonstrates what a great difference there is in the outlook on life in India and in other countries.

In ancient India there were many *āśramas* where *ṛishis* used to live, far away from the haunts of men, in quiet solitude, devoting their time to spiritual culture. They would naturally draw persons of a religious frame of mind, who would now and then go to them for guidance and advice. Those *āśramas* in course of time became places of pilgrimage to a wide circle of people. And as traditions began to grow round these places, they became more and more important. There are even now places which are associated with some *ṛishi* or other.

The study of the Vedas was limited to selected classes of people. But in the epic period attempts were made to popularize religion among the masses. This indirectly gave an impetus towards increasing the number of places which were considered holy. All the places associated with the life and activities of Rāma, Kṛishṇa and other such mighty souls, became sacred in the eyes of people. Similar was the case with those places which had some connection with any incident narrated in the Purāṇas. As Hinduism began to spread through its cultural conquest or its assimilation of the aborignal tribes, the number of sects in Hinduism began to increase. And every sect began to regard the places connected with the name of its founder as holy, and so they became in time places of pilgrimage. Gradually these became objects of reverence to the people of other sects also, on account of the innate catholic spirit of Hinduism, and thus by losing their sectarian character, they received wide recognition. In course of time the same place was considerd holy by the Hindus, the Buddhists and the Jains alike. As a result of this there is no narrowness or exclusiveness, but a spirit of disinterested sharing, of community of life and enjoyment. Besides, India, early in her history, attracted migrations, and became the home of many races, cults and cultures, living in concord, without seeking overlordship or mutual extermination. She became the chosen home of diversity and different social systems. Other national systems founded on different principles exclude

the possibility of such radical diversities and they break down in the attempt to unify them. But India's culture did not present any such difficulty. That is why she has been aptly called 'the epitome of the world.' Verily, India is a league of nations in miniature.

The decadent period of Buddhism saw the growth of a large number of rites and rituals within the fold of Buddhism itself, and that had its indirect effect on the Hindu society. With the rise of the Mahāyāna school of Buddhism, image worship was largely in vogue amongst the Hindus. Thus arose the necessity of building temples for worship. And every place where a big sanctuary was built and worship was performed with gorgeous ceremonials, began to attract crowds of people, and it became a place of pilgrimage to the following generations. Of the pilgrims who resorted to such places, some perhaps became famous for their exemplary religious life, or were regarded as men of realization, and this fact increased the importance of those particular places. Many rich persons considered it a great act of merit to build temples for the worship of their chosen deities, and they naturally wanted to build them in their own locality. This spirit accounts for the fact that every village in India has one or more temples of its own. And some of these temples receive wide attention, if they have any inspiring tradition, legend or association connected with them.

All the above factors have contributed to the growth of so many places of pilgrimage throughout India, which in their turn have played an important part in the religious life of the nation.

Some are of opinion that Hinduism derived the idea of pilgrimage from the Buddhists. It might be that the Buddhist *śramaṇas* roaming over the country gave a stimulus to the Hindus also to visit the places considered holy by them, but the germ of the idea can be traced to a much earlier period. Even in the *Aitareya Brāhmaṇa* (VII. 33.3) there is a passage encouraging the idea of pilgrimage. It runs thus: "There is no happiness for him who does not travel; living in the society of men, the best man often becomes a sinner; Indra is the friend of the traveller. Therefore, wander." In the *Mahābhārata* also there is a description of a large number of *tīrthas* which Yudhiṣṭhira visited, and they cover an area extending from the Himalayas to the South beyond the Vindhyas. According to Mr. E. B. Havell, there existed in India temples dedicated to Brahmā, Vishṇu or Śiva even before the Mahāyāna school of Buddhism gave an impetus to image worship. And if it be so, they must have attracted worshippers from far and near.

Whatever might be the origin and the history of the growth of pilgrimage in India, it cannot be gainsaid that the influence it has exercised on her religious and national life has been far-reaching. And it speaks highly of the spiritual bent of the Indian mind that the places of pilgrimage existing on her soil have never ceased to draw huge crowds of people. The number of pilgrims who visit Gaya is, according to one authority, about a lakh per year. Three times is the number of those who visit Puri or Benares. At Pandharpur in Mahārāshṭra, the temple of Viṭhobā draws about one and a half lakh of pilgrims on special occasions. Neither idle curiosity nor blind faith can account for this unique phenomenon. For most of the pilgrims have to undertake long journeys involving much physical discomfort and heavy expenses. Whatever the sceptics may say, it is an undeniable fact that a visit to Puri or Brindaban rouses in the hearts of the devotees a sweet joy of religious emotion.

Although the scriptures declare that mental discipline and internal purification have more or less the same effect as pilgrimage to holy places, the popular mind attaches special value to the latter and considers it an important part of one's religious life. Even famous saints are reported to have gone to sacred places for spiritual practices in the belief that their efforts will be crowned with success with greater ease in such places. They looked upon the places of pilgrimage from a point of view quite different from that of the historians or the antiquarians. Thus Śaṅkara had some of his realizations at Benares. Chaitanya Deva found the image of Jagannātha at Puri so very living that he was about to embrace the deity. Rāmdās saw the vision of Rāmachandra at the temple of Pandharpur. Tulsidās had his realizations at Chitrakut. Sri Ramakrishna saw many wonderful visions at Dakshineswar, Benares, Brindaban and other holy places. Even at the present time, when one hears of so many abuses in the places of pilgrimage, many people on visiting them derive wonderful inspiration and testify to their influence on their minds. The modern scientifically minded men may find it difficult to explain these phenomena, but the fact is that in all *tīrthas* it is not what is seen with the naked eye, but the hoary association that counts. So it is that while men of a certain temperament notice only the abuses that have crept into these places, the saints and pious devotees find religious inspiration on visiting them; where the sceptics see only stone and marble, the devotees feel the touch of divine life. No explanation regarding these can be given which will convince a doubting mind. But it is a fundamental condition of knowledge that one should keep an

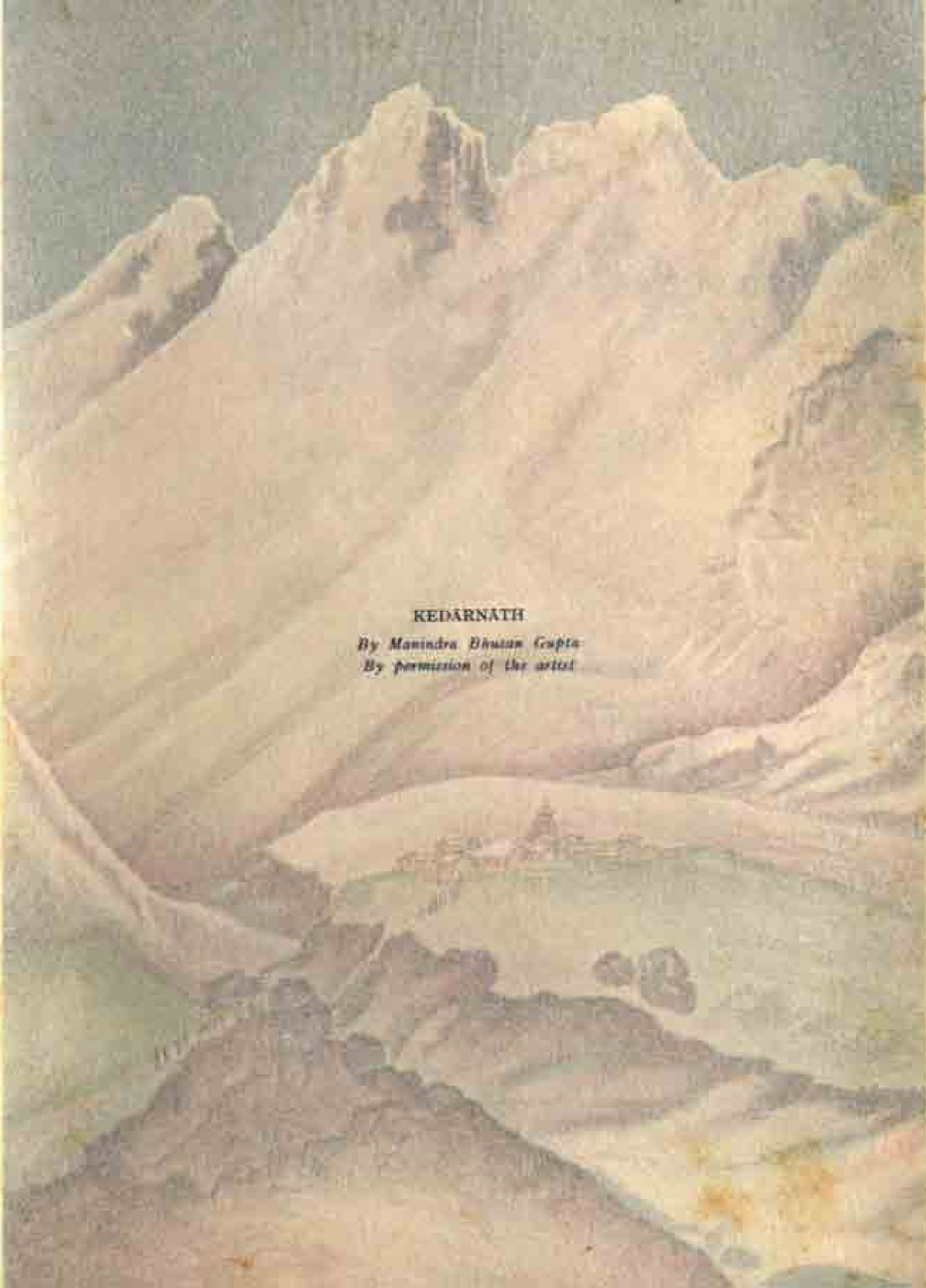
open mind and take facts as they are, though one cannot explain them through the intellect.

In any case, pilgrimage forms a vital function of Hindu religion. A monotonous life of routine often dulls the religious fervour in many. In such cases a visit to holy places gives a fresh stimulus, especially as it brings them into contact with many devout minds and helps to awaken a sympathetic response in them. When pilgrimage is done on foot to Badrinarayan or Amarnath, one meets with countless pilgrims whose devotion and love for God cannot but make a deep impression even on a sceptical mind.

Pilgrimage is one of the causes that have contributed to the catholicity of Hinduism; for through it people of different religious persuasions get an opportunity to mix intimately with one another and begin to appreciate the value and beauty of one another's creed. There are some sacred places in India where many sects of Hinduism are represented, and all the temples located there are visited by pilgrims without any distinction of creed or sect. Thus Benares with its two thousand sanctuaries and half a million images is a standing parliament of religious sects of ancient and modern India. Is there any doubt, then, that as a result of a visit to places like these, one's mind will be broadened and narrow views of life will be changed? At Puri the rigour of orthodoxy is completely loosened, and people eat with one another forgetting all distinctions of caste.

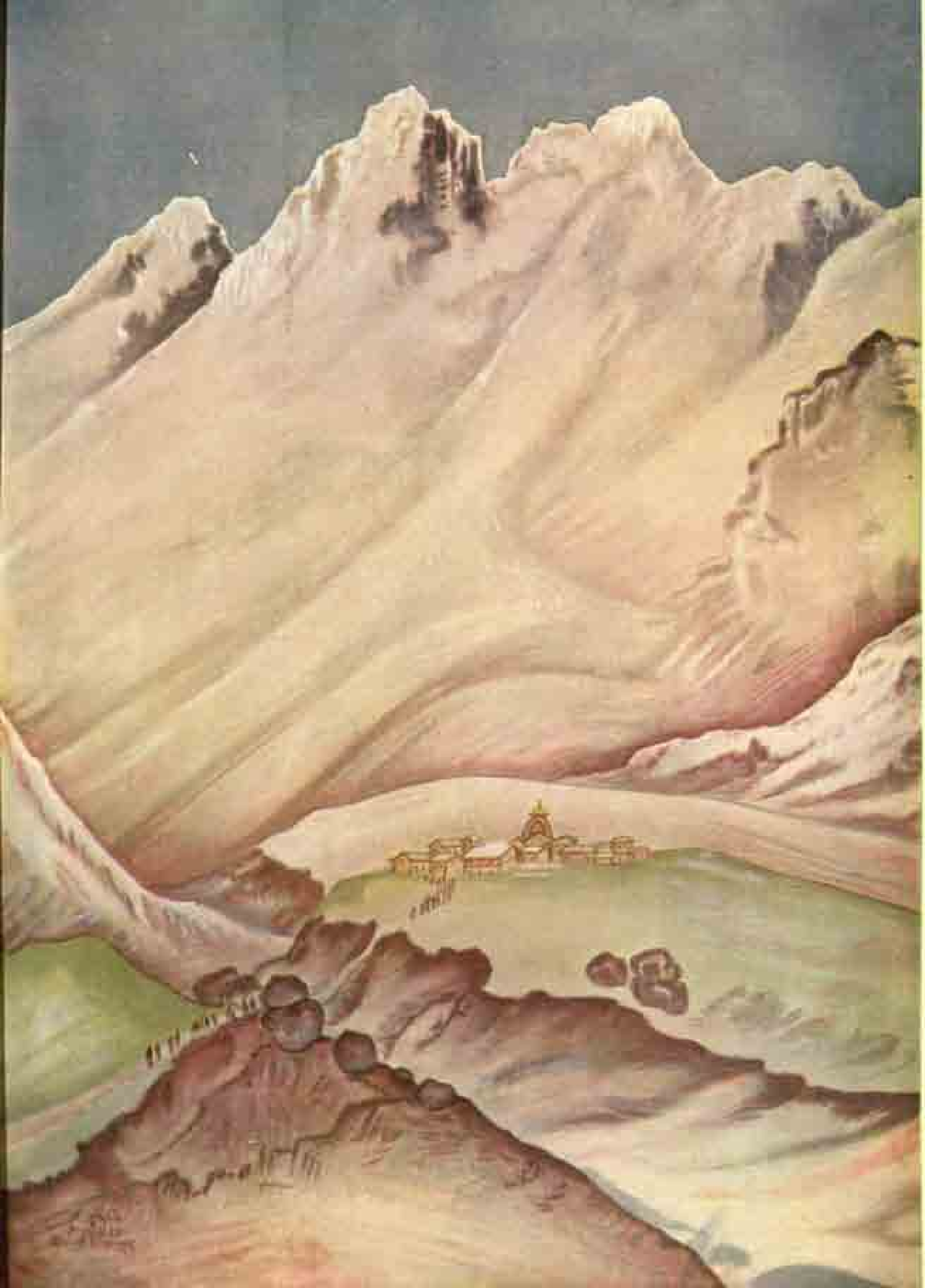
Pilgrimage has been one of the important factors of education to the Hindus. It serves the same purpose, if not better, to the Indians as a continental tour does to the Europeans. It affords an opportunity to the people living even in distant villages to know India as a whole, and also its different manners and customs. Formerly, when pilgrimage was undertaken on foot, the opportunity was greater. Even those women who do not generally stir out of their homes, observe freedom from conventions when on a pilgrimage. This has a great educative influence upon their lives.

Many places of pilgrimage developed into great seats of learning. People, when in holy places, like to acquire an additional merit by acts of philanthropy, and some of their money is spent in encouraging learning. It is thus that Benares, the spiritual capital of India, became the greatest seat of learning, and it has kept up the fame till now. In every important holy place there are *sadāvratas* (free kitchens), *dharmaśālās* and other institutions, where the poor are fed, the needy are helped,



KEDARNATH

By Manindra Bhusan Gupta
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and indigent students are maintained. They are an effective refutation of the charge that the Indians have no civic consciousness.

Many holy places have grown into centres of great commercial activity. It is but natural that in a place where there is a continuous stream of pilgrims throughout the year, there will be a great opportunity for commercial enterprise. It is thus that places like Benares, Puri and Amritsar have specialized in particular industries like silk, shawl, brass ware, etc.

Architecture, sculpture and painting received ample encouragement from pilgrimage. Even to-day there may be seen a large number of temples throughout the length and breadth of the country, from the interior of the Himalayas to the remotest part of Southern India, which are important not only for their beauty but also for their design and conception. Temples in India may rightly be said to represent philosophy in brick and stone, and temple-worship was in a way responsible for the great development of sculpture and painting.

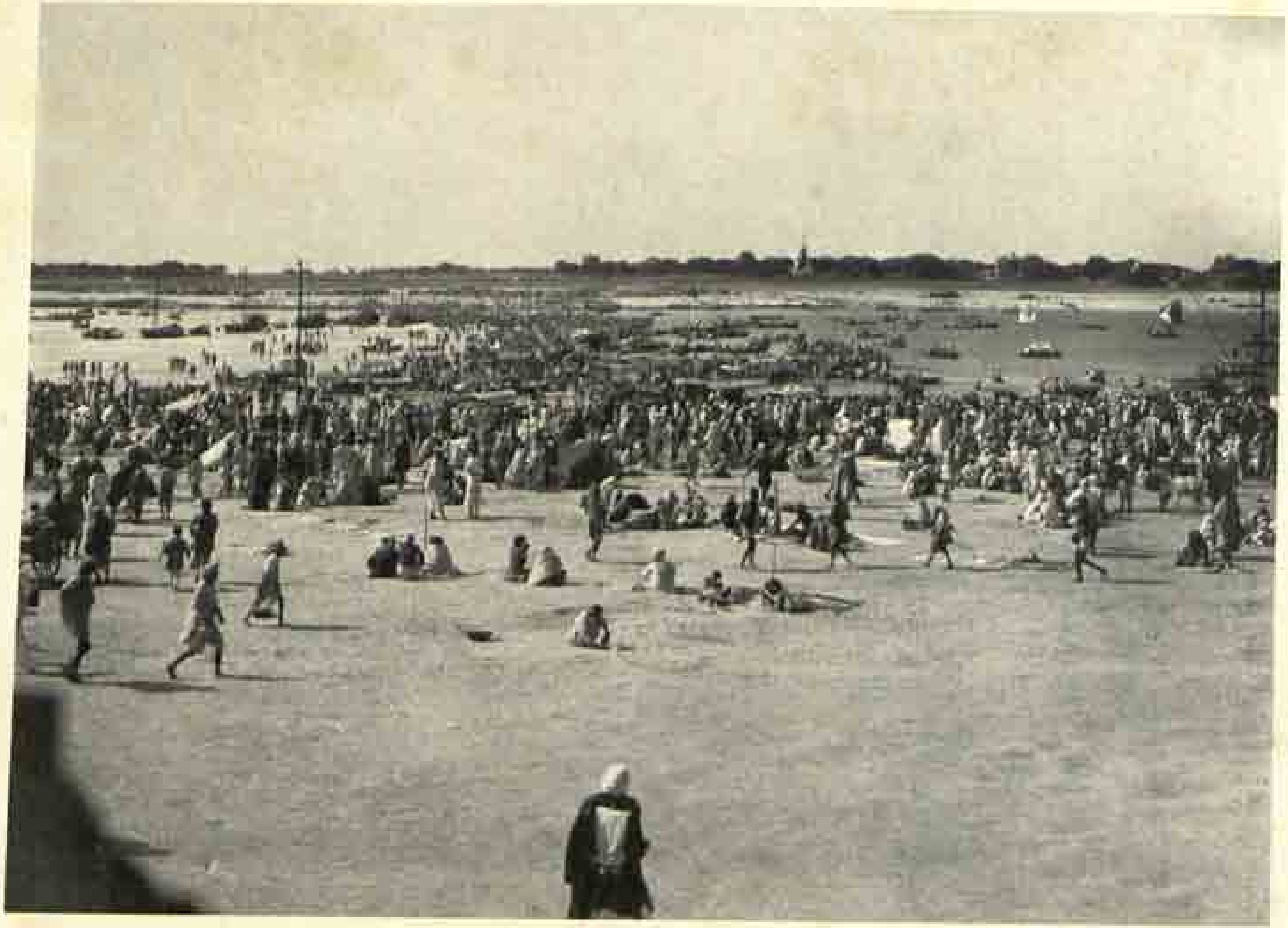
One of the greatest services the institution of pilgrimage has rendered to India as a whole is that it has impressed upon all people her fundamental unity in the midst of apparent diversity. It is through this institution of pilgrimage that the country as an abstraction has become transformed into a vivid and visible reality. And as a result, all parts of the country are deemed equally sacred and are objects of equal concern to the devotees. The religious imagination of the Indian nation has, indeed, utilized every spot of beauty in the vast country, which it has at once declared holy and endowed with a temple, shrine, or some religious symbol like a piece of hallowed stone, or even a tree. The Hindu's pilgrimage to the eternal snows of the Himalayas, the depths of forests, the palm-clad sea-shores, the hidden sources of rivers, or their mouths and confluences is in fact the natural outcome of his religious emotion and has ever served as an incentive to subjectivity, meditation and the growth of a sense of the country's underlying unity: There might be different castes in India, but they all followed the inspiration of the same scriptures; there might be different dialects, but to all people Sanskrit was a sacred language. Persons might be separated by long distances—some living far away in the Himalayas and some in the extreme south of the peninsula—but their hearts pulsated with the same hopes and aspirations; they had the same gods to worship, the same goal to aspire after.

Even in the Vedic age we find that there was a consolidated attempt to keep the people united through the bond of the same culture. When

the Aryans were confined to the North, their river hymns were limited to the rivers of the Punjab. But when with the process of time the wave of Aryan culture reached the farthest end of India in the South, the rivers of that region were included in the hymns, as the following invocation testifies: "Oh ye Gaṅgā, Yamunā, Godāvarī, Sarasvatī, Narmadā, Sindhu and Kāveri, come and abide in this water (offered by me)." Thus all the rivers of the North and the South were invoked on sacred occasions, and the vision of one united India was conjured up before the minds of the devotees through those prayers. The same thing was done with regard to the mountains also. In the *Mahābhārata* are named seven mountains which are supposed to be sacred, viz. the Raivataka, Vindhya, Sahya, Kumāra, Malaya, Śrī-Parvata and Pāriyātra, and they are spread practically over the whole of India. Similarly, there are seven sacred places of both North and South—Ayodhya, Muttra, Hardwar, Benares, Conjeeveram, Ujjain and Dwarka—which are looked upon as possessing the power to grant salvation to one who visits them. Naturally the Hindus visiting those places would feel how the whole of India was one to them. A great service towards uniting all the Hindus by a common religious and cultural consciousness was done by Śaṅkarāchārya when he established four sacred monasteries in four extreme points of India, viz. Badrinarayan, Rameswar, Dwarka and Puri. Similarly, there were singled out four sacred lakes—Bindu, Pampā, Nārāyaṇa and Mānasa, in the east, south, west and north respectively. And it would not be wrong to assume that the principle underlying the choice is more or less to lead the masses out of their homes, their villages and provinces on all-India tours of pilgrimage, so that they may know their country in all its parts and get into touch with their people. A spirit of nationalism naturally sprang from this geographical knowledge of the country as a whole. Under the peculiar religious system that obtains in India, the southerner will feel as much longing for Benares as a northerner for Setubandha (Rameswar), and both will have a common longing for Dwarka and Jagannath. North and South, East and West meet in the embrace of a religious life that transcends the narrow boundaries of place, sect or creed. It is in this way that Hinduism, while deepening the spiritual consciousness of its followers, has always fostered a sense of solidarity among them through a lively sense of the mother country, which grasps the whole of it as a unit despite the vastness of its size and its continental variety.



KUMBHAMELA PROCESSION AT ALLAHABAD



KUMBHAMELA, A PANORAMIC VIEW

From time to time a great impetus was given to pilgrimage by the prophets and other towering religious personalities. Śaṅkara, Chaitanya and other such spiritual giants of the land left a deep and permanent impression wherever they went. Thus Chaitanya's influence can be traced even to-day in the South, and Śaṅkara is as much worshipped in the North as in his own place of birth.

Melās or religious fairs are quite akin to pilgrimage as regards their purpose and utility. They are highly useful from the standpoint of religion, of national solidarity and of economics. They constitute, in short, parliaments of religion, shifting universities, and have been serving the purpose of national exhibitions of arts and crafts. The origin of *melās* is veiled in obscurity, but their effect has been phenomenal and abiding. It is not an exaggeration to say that some of the most important *melās* like the *kumbha-melā* have grown to be all-India institutions, but there are others which are provincial in their character or are limited to smaller areas. Many villages also witness occasional sittings of *melās* which create considerable interest amongst the people of the locality. Even in the interior of the Himalayas one may see *melās* held round about some important local temple, which promote the religious feeling of the people and indirectly stimulate industry. Sometimes they are held on the banks of rivers which have got some sacred association. In many fairs there can be seen wandering ascetics who give religious discourses to the people that assemble on the occasion. *Melās* perhaps originated from the religious impulse of pious people, and the businessmen afterwards added to them the feature of a market.

The most important of the *melās* in India, the *kumbha-melā*, has still preserved its glory as a great religious institution. It is mainly an institution of *sannyāsins* and wandering ascetics, and it is this large concourse of monks of diverse orders, that draws millions of religious-minded men from all parts of the country.

The four important places of pilgrimage, viz. Hardwar, Allahabad, Ujjain and Nasik, where it is held at regular intervals, lend a special sanctity to the gathering. There is no definite organization behind it; still thousands of monks—some of whom have perhaps lived for years in solitude, far away from the haunts of people—assemble there. Naturally, the religious feelings of all India are deeply stirred on such occasions, and those who meet in the *melā* have a splendid opportunity to discuss religious problems. By a flying visit to the places of pilgrimage, people may not always get a chance to meet persons with whom they can intimately

talk on religious subjects, but in the *melā* there is a greater possibility of their finding men who are qualified to quench their religious thirst. The very memory of such a vast gathering of religious persons serves as a stimulus to awaken in the minds of the pilgrims a deep religious consciousness, even though they may be engrossed in worldly pursuits. The *kumbha-melā* is held every three years, probably to keep up the religious enthusiasm of the people and to prevent them from falling into a life of stagnation.

Thus the importance of pilgrimage and religious fairs in the cultural evolution of the Indian people can hardly be overestimated. From time immemorial they have been woven into the very texture of our national being and have served to mould our destinies in some form or other at every stage of our corporate growth. These indigenous institutions, which have preserved the spiritual aspirations of the people and stimulated in the Indian mind a deep-seated love for the country in spite of her manifold diversities, should always receive a due measure of encouragement from the religious-minded people of India. In short, it is these religious institutions that constitute the very bed-rock of our synthetic outlook and of our lofty spiritual idealism. The greater the number of such holy places, the better for us; for they serve as a great incentive to our religious life and contribute to the growth of our national and cultural solidarity.

II

INSTITUTIONS

SOCIAL LIFE IN ANCIENT INDIA

INTRODUCTORY—THE IDEALS

The Indian social institutions have been bodied forth by the Indian view of the meaning and purpose of life—by the Indian ideals. As contrasted with the modern European ideal of life which is ethical, the Indian ideal may be characterized as spiritual, as it centres round the welfare of the soul. That man possesses a soul which is immortal, that his life runs through an eternal course of existence, was recognized at a very early period of the evolution of Indian civilization. This was elaborated in the Upanishad portion of the Veda, but the rudiments may be traced back to the Ṛig-Vedic hymns. Various hymns in the final book of the *Ṛig-Veda*—the *Purusha Sūkta* (X.90), the *Nāsadīya Sūkta* (X. 129), the *Devī Sūkta* (X. 125), and others—speak of the Universal Spirit animating all creation, of the Supreme Soul which not only animates the universe, but is moreover present in man, in all animate and inanimate creation, diversified in various forms, and carrying them through processes of repeated births and deaths, through dissolution and renovation. But even in the very first book of the *Ṛig-Veda* (I.164), we find enquiries about the Supreme Spirit and the individual soul: "Who has seen the primeval being at the time of his being born? What is that endowed with substance which the unsubstantial sustains? From earth are the breath and blood, but where is the soul? Who will repair to the sage to ask this?"[1] (I.164.4). In this hymn also we meet with several verses round which centre many discussions in the Upanishads: for example, the verse comparing the vital and the Supreme Spirit to two birds: "Two eagles, joint companions, embrace the same tree; of them, the one eats the sweet berry; the other looks on all the time, not partaking" (I.164.20). "Breathing lies the swift-moving thing, living, stirring, fixed, in the midst of the abodes; the living one moves at the will of the dead one; the immortal one is of like source with the mortal. They call him Indra,

[1] The translations of the passages from the *Ṛig-Veda* are generally based upon the commentary of Sāyaṇa, and upon Wilson's translation which follows that commentary. But sometimes I have differed from Sāyaṇa. I have availed myself of the translation of the *Atharva-Veda* by Whitney and Lanman, Oldenberg's translation in the *Sacred Books of the East* series, and also of Geldner's German translation of the first four books.

Mitra, Varuṇa, Agni; likewise he is the celestial, well-winged eagle; what is one, the sages name variously; they call him Agni, Yama, Mātariśvan" (I. 164.30,46). Verses of similar import may be quoted from other parts of the hymns also, showing that the discovery of one Supreme Spirit pervading the universe, and of the soul animating the physical body of man, had already taken place in the age when the early hymns were composed.

The socio-religious institutions of the Indians, in their evolution, were guided by this belief in the eternity of the existence of each individual man. They took their characteristic shape and form under the guiding principle that they must help man in his struggle for the eternal progress of his soul—in his endeavours to reach, by a life of rigorous discipline and purification, the highest levels of spiritual bliss. Thus, it was recognized, is the *summum bonum* of life, its maximum happiness, to be realized. The pervasive spirituality of Indian culture attracts our notice at every turn; from the earliest times of which we have any record, the Indo-Aryan had his eyes turned to the eternity of existence beyond death, rather than to the short-lived joys and sufferings of this world, the interests of which he did not entirely overlook. He might enjoy the good things of the earth, but he would not permit them to get the mastery over him, he would not allow them to cloud and darken his higher Self; his knowledge of the little pleasure that may be derived out of them should foster and strengthen the conviction that the best of them is but nought in comparison with the supreme spiritual bliss that is his birthright. It was discovered early in the evolution of Indian civilization that the path to the final goal, to immortality, to the eternal life of bliss, lies through renunciation of material enjoyments, and not through acquisition (*Kaivalya Up.* 2).

The basis of Indian society was a sort of realistic idealism. The practice of life was made to agree with its philosophy; there is no partition-wall in the Indian mind between the secular and the spiritual, which are wonderfully blended together into a harmonious whole. The European attitude towards philosophical and metaphysical investigations is that they are mere abstract speculations having no bearing upon actual life, while in India the truths that come out as the results of those investigations are sought to be applied in life, and the highest fulfilment of life would be the acquisition of a knowledge of these truths. Social institutions, in their evolution, give expression to the principles thus lying in the background. The Indian life in all its aspects, both in its

ordinary daily course as well as in the more important relations, is bound up with religious observances calculated to bring about a realization of the ultimate truths by a graduated course of mental and moral discipline. Even the care of the physical body was looked upon as a sacred duty.

Indian society was thus led to elaborate a system adapted, in all its limbs and phases, to give expression to this innate spirituality, to the great principle that life is a long pilgrimage extending beyond death into the infinite and the eternal. Let each individual in the society endeavour to realize his own spiritual welfare, and then it must happen that his own personal interests cannot run counter to the interests of others. The ultimate goal being the same, the paths followed by separate individuals, though different according to the special environment of each, are bound to be convergent, and there should be no occasion for conflict.

In his relation to the rest of society, this individual, according to the Indian scheme, lays stress upon his duties—his *dharma*—by which he is to secure his own advancement, and thus he may be distinguished from the European who emphasizes his rights. Of course, the one implies the other, but while right looks to the acquisition of power and comforts for the physical self, the path of duty lies through the discharge of debts which a person owes to all about him—to his fellows in the community, to his forefathers, to all sentient beings. At his very birth, an individual is born charged with liabilities, as the Brāhmaṇa works declare: "Verily, whoever exists, he, in being born, is born as owing a debt to the gods, to the *ṛishis*, to the fathers, and to men."[1] A verse in the *Atharva-Veda* gives expression to this solicitude for getting freed from all debts and obligations: "Debtless in this world, debtless in the other, debtless in the third world may we be; what worlds there are traversed by the gods and traversed by the fathers, may we abide debtless on all those paths"[2] (*A. V.* VI. 117.3). We find this sense of debts working in the Indian mind at all stages of the evolution of Indian civilization. "When a man has paid the three debts, let him apply his mind to the attainment of final liberation; he who seeks it without having paid his debts sinks downwards"—thus declares Manu (VI.35).

[1] *Taittiriya Brāhmaṇa* VI. 3. 10. 5; *Śatapatha Brāhmaṇa* I. 7. 2. 1.

[2] In the translation of passages from the *Atharva-Veda*, I have followed Whitney and Lanman's translation of it in the *Harvard Oriental Series*, Vols. 7 and 8. I have differed from it very rarely.

In fact, this appreciation of the debts to clear, that is, of the duties to discharge, has a powerful hold over the Indian mind.

Fortunately for India, it possesses a storehouse of ancient customs and usages in its sacred literature. In the first place, the great compilation of hymns, the *Ṛig-Veda*, presents a society already highly cultured, with a cult already highly developed, and the rich store of customs, usages and rituals gives us a glimpse not only of ancient Indian antiquity, but also of the time before the Indo-Aryans separated from the main stock. The literature of ritual, the Brāhmaṇas and the *Śrauta* and *Gṛihya Sūtras*, has been found to be, not a mere figment of the Brāhmaṇical brain, as the philological school of Indologists were inclined to think, but a treasure-house of actual customs, traditional rules, rituals and ceremonies of the ancient Indo-Aryans, depicted with minute accuracy without the least attempt at building up any theories like modern works on sociology. Ethnological investigations have proved the sterling worth of these ancient unsophisticated documents. Similarly the *Dharma* literature, as also the Epics and Purāṇas, are found to contain, not the speculations of interested Brāhmin priests, but to possess, in a codified form, the ancient prescriptive law and the ancient customs. Thus Śruti and Smṛiti, the revealed text and the ancient tradition, are both of pre-eminent value for obtaining a correct picture of ancient Indian social life.

THE FOUNDATIONS OF INDIAN SOCIETY—VARṆA AND ĀŚRAMA

Ancient Indian society was founded upon *varṇa* and *āśrama*—a fourfold classification of the entire people into *varṇas* (castes) and a fourfold division of the life of each individual into *āśramas* (stages). We shall begin with a few observations on the part played by *varṇa* in the carrying out of the Indian ideals.

The Indo-Aryans were divided into three classes among themselves—Brahman, Rājanya and Viś in the earlier age, and Brāhmaṇa, Kshatriya and Vaiśya in later times. The first class included those who devoted themselves to a conservation of the ancient ideals; they maintained and developed the ancient ritual which was already elaborate in the Ṛig-Vedic times; they set themselves to probe the mysteries of the universe, to investigate the relation between the Supreme Spirit and the individual soul, and besides, to find out how best to translate the truths discovered into actual practice. Therefore the conduct of a Brāhmin is naturally characterized by tranquillity, self-restraint, penance, purity, forgiveness,

straightforwardness, knowledge, wisdom, realization of truth, and faith (*Gītā* XVIII. 42). These selfless workers and thinkers naturally took the lead in a society whose ideals were spiritual. The second class was charged with the task of protecting the people, of defending them against foreign aggression, and hence worldly power and rulership came naturally to the Kshatriya. His conduct is naturally characterized by prowess, dignity, fortitude, skill, presenting an undaunted front in battle, liberality and lordliness (*Gītā* XVIII.43), and he must "abstain from attaching himself to sensual pleasures"[1] (*Manu.* I.89). Sometimes, though but rarely, there was an interchange of functions between these two classes. Some Brāhmin families, like the Jamadagnis and some Bharadvājas, took to fighting, and some Kshatriyas to metaphysical investigations. Brāhmin householders of high position and great Vedic learning (*mahāśālāḥ mahāśrotriyāḥ*) had no scruples in repairing to kings like Aśvapati Kaikeya or Pravāhaṇa Jaivali for instruction in truths known to them (*Chhānd. Up.* V. 11.4, 3.6).[2] The third class formed the general mass of the Aryan people. They are the producers of wealth in the community, and form the basis upon which the other two classes of society, both the Brahman and the Kshatra, rest (*Śat. Br.* XI. 2. 7. 6).[3] The normal duties of the Vaiśya comprehended agriculture, cattle-rearing and trade (*Gītā* XVIII. 44). In the whole social polity, the Vaiśya was in charge of agriculture, industry and commerce, the Kshatriya of political and administrative functions, and the Brāhmaṇa of the spiritual concerns. It was incumbent upon every member of these three classes that made up the Aryan community, to study the Veda, the great storehouse of ancient traditions and ideals, so that the people might not forget them and fall off from the standard set up by them.

The Aryan community was further enlarged by the addition, already in the Ṛig-Vedic age, of a fourth class, the Śūdras, mainly recruited perhaps from the aborigines. Their normal function was service. They could not be expected to study the Veda, the language and the culture being strange to them, but for their spiritual uplift they had access to

[1] In the translation of passages from the *Manu-Saṁhitā*, I have used Bühler's translation in the *Sacred Books of the East* series, Vol. XXV, though my rendering has often been a little different from his.

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the great body of traditional lore drawn up in popular speech—the Itihāsa and the Purāṇa—which had grown up as distinct departments of Indian literature so early as the time of the *Atharva-Veda* (XV. 6. 4 etc.), and in the Brāhmaṇas, these branches of literature are given the rank of the 'Fifth Veda' (*Chhand. Up.* VII. 1. 2. 4). The Indian method of conversion of a primitive people is not by forcing its own culture upon them, but by a slow process of infiltration and absorption which is still going on, teaching them more by example than by precept.

These differences in duty and functions, however, imply no inherent deficiency or incompetence for any one of the *varṇas*, as regards the realization of the supreme goal which may be reached by every individual if he remains true to the duties especially appertaining to his particular position in life, that is, his *varṇa*, these *varṇa*-duties being discharged without attachment, with a sense of detachment from selfish ends or intents. These *varṇa*-duties are determined, no doubt, by birth; but birth cannot be a mere accident; in a properly organized society, the individual soul would be born in an environment that would help the fulfilment of its own function in life, and *varṇa* thus comes to be, not a mere artificial classification, but a natural differentiation, by quality and function (*guṇa* and *karma*) immanent in the soul. Moreover, birth is but a fruition of an individual's own past acts, and it lies with himself to remove any disabilities from which he suffers in this life, by a proper discharge of the duties which are natural to him, and, therefore, easy to perform; an ambition to take up a supposed higher course of duties in imitation of others would only retard his progress. Is it not now recognized that neither education nor repression can alter the psyche determined at birth? Physically speaking, nothing can change the particular configuration of the brain-cells as defined when a man is born. Nothing is easier for him than to work out this natural psyche born with him, taking care not to forget the supreme ideal that is the birthright of every man to realize, and the period of a life-span, or even of several spans of life, spent in the pursuit of this ideal, through the portals of birth and death, is insignificant, in consideration of the infinitude and eternity of the bliss that he is heir to.

ĀŚRAMAS

The *āśramas* are four life-stages with a graduated course of duties calculated to lead an individual, step by step, towards a realization of

the supreme spiritual ideal; they are stages through which, by intensive exertion and effort (*śrama*) of the body as well as of the mind, by acts of religious exercise and austerity, by self-denial and self-discipline, one may bring one's whole self under subjection. Hence Deussen properly translates *āśramas* by 'places of mortification' and he observes: "The whole life should be passed in a series of gradually intensifying ascetic stages, through which a man, more and more purified from all earthly attachment, should become fitted for his 'home' (*asta*), as the other world is designated as early as the *Ṛig-Veda* (X.14.8). The entire history of mankind does not produce much that approaches in grandeur to this thought."[1]

The first stage is that of the *brahmachārin*—the student—who has to study the Veda so that he may be imbued with the national ideals and acquainted with the high standard of spiritual perfection that it should be the ambition of his life to reach, and to pass through a course of rigorous discipline so that he may be trained successfully to withstand the temptations that flesh is heir to, specially the impulse; chastity and continence are specially associated with the *brahmachārin*. In the modern scheme of education the student is trained to earn a living, and it is sought to place him in surroundings calculated to implant in him a high standard of life, and hence the university-builders endeavour to provide the students with palatial residential houses, fitted with all equipment for ease and comfort. In the ancient Indian scheme it was sought to reduce the physical comfort of the student to a minimum.

The next stage of life is that of the *grihastha* or householder, the mainstay of the whole social structure, and his most imperatve duties are to set up a family, to beget offspring, and to progress towards the ideal by sacrifice, by worship, by charity, by renunciation. He must beware lest the worldly life should parch and dry up the springs of higher life in him. Placed, as he is, in an environment ordinarily unfavourable to spiritual growth, the *grihastha's* struggle is taken to be the hardest. As Manu observes, "The duties of this order, which cannot be practised by men with weak organs of sense, must be carefully observed by him who desires imperishable bliss in heaven, and constant happiness in this life" (III.79). But the duties of these two stages, of the student and the householder, if carefully discharged, would lead one to the ultimate goal, as stated by the *Chhāndogya Upanishad* when it rounds up its

[1] *The Philosophy of the Upanishads*, by Paul Deussen; English translation by Rev. A. S. Geden, p. 367.

teachings at the very close of the work: "He who has learnt the Veda from a family of teachers, according to the sacred rule, in the leisure time left from the duties to be performed for the teacher; who, after receiving his discharge, has settled in his own house, keeping up the memory of what he has learnt by repeating it regularly in some sacred spot; who has begotten virtuous sons, and concentrated all his senses on the self, never giving pain to any creature, except at the *tīrthās* (sacrifices etc.)—he who behaves thus all his life, reaches the world of Brahman, and does not return, yea, he does not return" (VIII.15).

The householder, when he sees signs of old age coming upon him—when his hair is growing grey, and his sons or daughters are getting children of their own, should be ready to renounce the comforts of settled life at home, to retire from the world (*Manu*. VI.2), to give up all "desire for children, desire for possessions and desire for the world," as the *Bṛihadāraṇyaka Upanishad* (III. 5.1) puts it. He leaves the crowded habitations of men, becomes a *vānaprastha*, a resident of the forest, where he castigates the body to purify the soul, lives upon such wild berries and herbs as the forest may offer him. The rule about confining himself to the forest is very strict: "He shall never enter a village, not even step on ploughed land," and he shall wear a dress of materials procured in the woods. He may build there a hut and live in the company of his wife, but it must be a life of chastity and austerity. The severest penances are now undertaken, such as we read of King Dhṛitarāshṭra when he took to the life of a forest recluse: "That great king began to practise severe austerities like the great *ṛishis* (seers), with the delusion of his mind all eliminated, with his body reduced to mere skin and bones, with the muscles all dried up, bearing matted locks on the head, and with his person clad in barks and skin." Thus, we are told, not only did "the great king set himself to the practice of penances, but put also his followers to the same course of conduct. Queen Gāndhārī also, along with Kuntī, clad herself in barks of trees and deer-skins, and began to observe the same vows (as the king). Restraining all their senses in thought, word and deed, as well as through the eyes, they began to practise the severest mortifications" (*Mahābh*. XV. 19).

The *vānaprastha* takes his fire also to the forest, and offers in it the daily oblations to the gods, morning and evening; he has to recite the Vedas regularly, to make offerings to the manes, to receive guests of all castes with hospitality and to feed all animate beings; that is, he

has to attend to the five great sacrifices (*mahāyajñas*) with wild-growing forest produce—fruits, roots and herbs; he may hoard these things for a short while, but he shall not eat anything that has been hoarded for more than a year.[1]

In the last quarter of his span of life a man enters into the fourth stage which offers him a most final and certain means of reaching the supreme goal, of acquiring a knowledge of the Self, and of emancipation from the bonds of life and death. In the Upanishads he is called by various names; he is a *yati*, one who has brought all his passions and feelings under restraint; a *sannyāsin*, who has cast off everything from himself; a *muni* or inspired seer devoted to intense meditation on the Brahman; a *parivrājaka*, who wanders about the world without house or home; or a *bhikshu*, a mendicant who lives entirely on the voluntary gifts of the people. He devotes himself, more intensively and exclusively than ever before, to the supreme quest of life, unfettered by any duties and obligations, absolutely detached from house and home, from friends and relatives, from caste restrictions and sacrificial observances.

The *yati*[2] builds no hut, keeps up no fire, stores up nothing (*anichayaḥ*), nothing does he call his own (*amamaḥ*); "he shall live without a fire, without a house, without pleasures, without protection," says Āpastamba (II.21. 10). He is absolved from making offerings to gods or men; he discontinues performance of all ceremonial observances. He shall wear clothes thrown away by others as useless (*Āp.* II.21. 11), to cover his nakedness (*Gaut.* III. 18-19). He shall not wear any visible mark of his order, nor follow any visible rule of conduct (*Vas.* X.18). On the bare ground only is he to sleep (*Vas.* X.11). The forest shall be his constant abode, and he shall not wander about even in sight of the village cattle (*Vas.* X. 15-16). He shall enter a village only in order to beg, after the people have finished their meals, when the kitchen fire has been extinguished, and when the cleansing of the dishes has been finished (*Baudh.* II. 11.22). He shall beg just so much food only as will sustain his life; he must not eat even so much as will fully satiate his hunger (*Vas.* X. 25). He is not to stay a second night

[1] For the duties of the forest-dwelling hermit or *vānaprastha*, see *Āpastamba Dharma-sūtra* II. 21-23; *Gautama* III. 26-35; *Vasishṭha* VI. 19-20 and IX; *Baudhāyana* II. 11, 14-15 and III. 18ff. In the translations of passages from the *Dharma-sūtras* I have used Bühler's translation in *S.B.E.*, Vols. II and XIV, and for the *Gṛihya-sūtras*, Oldenberg's translation in *S.B.E.*, Vols. XXIX and XXX. I have made changes in both.

[2] The rules of the fourth *āśrama* are given in *Āp.* II. 21. 2-17; *Gaut.* III. 11-25; *Vas.* VI. 19-20 and X; *Baudh.* II. 11. 16-26; 17. 1-18, 27.

in the same village, but he wanders about neither caring for this world nor for heaven. 'Let him not be dejected when he obtains nothing, nor glad when he receives something. Let him only ask as much as will sustain life, without caring for household property. He, forsooth, knows the road to salvation who cares neither for a hut, nor for water, nor for clothes, nor for a house, nor for a seat, nor for food, nor even for holy places' (*Vas.* X. 22-23). He is free from all injunctions and prohibitions.

He shall be even-minded (*samaḥ*) towards all creatures, to an injury or a kindness. He shall not take life in any form, not even by crushing a seed. He shall not take parts of plants and trees, except such as have become detached spontaneously (*Gaut.* III.20). The *muni* who wanders about at peace with all creatures, forsooth, has nothing to fear from any living being. But he who becomes an ascetic and does not promise safety from injury to all beings, destroys the born and the unborn; and so does an ascetic who accepts presents (*Vas.* X. 2-3).

The *yati* must live in chastity (*ūrdhvaretas*); he shall not enjoy objects of sensual gratification. He must restrain his speech, his eyes, and his actions. Abandoning truth and falsehood, pleasure and pain, this world and the next, he shall constantly seek in his heart the universal soul. 'Freedom from future births is certain for him who constantly dwells in the forest, who has subdued his organs of sense and action, who has renounced all sensual gratification, whose mind is fixed in meditation on the Supreme Spirit, and who is wholly indifferent to pleasure and pain' (*Vas.* X. 77). 'Let him not desire to die, let him not desire to live; let him wait for his appointed time, as a servant waits for the payment of his wages' (*Manu.* VI. 45). 'A twice-born man who wanders about (*parivrajati*) after the successive performance of the above-mentioned acts, shakes off sin here below, and reaches the highest Brahman' (*Manu.* VI. 85).

This last stage of the *yati*, *parivrājaka*, or *sannyāsin*, is meant, says the *Vaikhānasa-Dharma-Sūtra*, only for a Brāhmaṇa, who, according to the *varṇa*-constitution of Indian society, is required to pass through a more rigorous course of self-denial and discipline than the others, and is thus better fitted to take up this life of absolute surrender to the ideal, taking into no account the severe physical endurance and hardship demanded of him in ripe old age. Three stages ending with that of the forest-recluse are ordained for the Kshatriya, who, by the nature of his duties and station in life, has a greater taste of worldly comforts

and power; the last stage of severe mortification was found, for the majority of them perhaps, too strenuous; yet the function and activity proper to the Kshatriya developed hardihood and the power of enduring privations. The Vaiśya, whose outlook on life was mainly economical, governed by the acquisition of wealth, found it too much of a hardship to renounce the comforts of life in advanced years; hence the first two *āśramas* alone are prescribed for him; he ends his life as a *gṛihastha* or householder. The Śūdra, having not to study the Veda, knows only the householder's stage of life and none other. Nevertheless caste is no impassable bar to the realization of the supreme ideal, as we find illustrated in the *Mahābhārata* in the case of Vidura who, though born of a Śūdra mother, was throughout his life marked by superior spiritual purity, and attained, we are told, the position of a *yati* or ascetic at the fourth stage of life, and as such it was ordained that his body should not be cremated. King Dhṛitarāshṭra with Gāndhārī and Kuntī, however, laid down their lives at the third stage.

At the present age, when almost all over the globe men are dominated by the Vaiśya ideal, when the dollar is almighty, people naturally fall into the two stages of the student and the householder. Even now people retire in advanced years from active work, but they do so to live on their balance at the bank, in greater comfort and ease than ever before, to save their energies, to 'husband out life's taper at the close.' Where now is the ideal that could lead powerful kings, having the command of all the luxuries that their age could afford, to cast off power and comfort and take to the hard life of the forest? Only a firm conviction in the flimsiness of all worldly possessions could persuade the ancient kings to take such a step. King Bṛihadratha of the Ikshvāku family who, we are told by the *Maitrāyaṇa-Brāhmaṇa-Upanishad* (I. 1-4), having established his son in his sovereignty, went into the forest and performed the severest penances, standing with uplifted arms, looking up to the sun, cries out in the anguish of his soul, "What is the use of the enjoyment of pleasures in this offensive, pithless body—a mere mass of bones, skin, etc.—which is assailed by lust, hatred, greed,...hunger, thirst, old age, death, illness, grief, and other evils!...In such a world as this, what is the use of the enjoyment of pleasure, if one who is fed on them is seen to return (to this world) again and again!" And this great king implores the sage Śākāyanya, "Deign to take me out! In this world I am like a frog in a dry well. O Saint, thou art my way, thou art my way."

In the *Ṛig-Veda*, the *āśrama*-stages are not mentioned as such, but the institutions of the student (*brahmachārin*), householder (*gṛihapati*) and ascetic (*muni*) are already there. Bṛihaspati who has been separated from his wife is said to be wandering about as a *brahmachārin* (*Ṛ.V.* X. 109. 5), which word, therefore, has already acquired its technical sense of one practising continence. The regular teaching of students by a teacher is referred to in the so-called 'Frog-hymn,' where the poet, moved by the awakening of the frogs at the commencement of the rainy season, compares their croaking to the recitation by students of their lessons, in imitation of their teacher. "When one repeats," it goes on, "the utterance of the other, like those who learn the lesson of their teacher, then every limb of yours seems to be swelling, as eloquent ye prate upon the waters."[1] The householder, *gṛihapati* (lit. master of the house), is mentioned repeatedly in the hymns, as well as in later Vedic works. The ascetic, *muni*, is described in a hymn (*Ṛ.V.* X.136) as one wearing long hair (*keśin*), dressed in brownish dirty-looking garments, and wandering about the whole width of India, from the Eastern Ocean to the Western, through untrodden paths, on the tracks of the wild beasts and of the celestial nymphs and minstrels; they are inspired and exhilarated by their *muni*-character, and are the beloved and devoted friends of the gods. Indra himself is a friend of the *munis*, declares another hymn (*Ṛ.V.* VIII.18. 14), and a third hymn (*Ṛ.V.* VII.56. 8) compares the shaking of the trees as the wind blows against them to the agitation of a *muni*, evidently when he is in an ecstatic rapture. Here there can be no doubt that this Ṛig-Vedic *muni* is none other than the ascetic depicted in the Upanishads and variously styled there as *muni*, *yati*, *parivrājaka*, *bhikshu* or *sannyāsin*. The *vānaprastha* is not mentioned in the *Ṛig-Veda*, and possibly the life after the householder's stage had not yet been divided into two grades. In the earlier Upanishads we find the same state of things, but we see the *āśramas* taking a more definite shape, though not yet fully developed. The *Chhāndogya Upanishad*, for example, in the last chapter (VIII. 15) refers to the student returning home after studying the Veda residing in the teacher's family, and practising austerities at home among friends and relatives; in another chapter (V. 10. 1-6) a contrast is made between those who in the forest follow faith and austerities and those who in the village practise a life of sacrifices, works of public utility and charity.

[1] Macdonell, *History of Sanskrit Literature*, p. 122.

In another place again (II. 23. 1-2), the same Upanishad speaks of all these three stages as inferior to that of the *Brahma-saṁstha*—one firmly grounded in the Brahman; this last may be regarded as identical with the *muni* in the fourth stage, or he may be regarded as one who transcends all the *āśramas*—*atyāśramin*—as the *Śvetāśvatara Upanishad* puts it. The *Bṛihadāraṇyaka Upanishad* similarly assumes the three stages of the *brahmachārin*, the householder and the forest-recluse, and contrasts them with the person who possesses a knowledge of the Ātman or Self, and has thus reached the supreme goal. We see here the four stages gradually getting into shape. They are fully mentioned in the correct order in the *Jābāla Upanishad* (ch. 4) : " When the period of studentship is ended, a man becomes a householder; after he has been a householder he becomes a forest-recluse; after he has been a forest-recluse, let him wander about as an ascetic. Or, if in the alternative, one passes into the order of the ascetic from the stage of the student, or from that of the householder, or from that of the forest-recluse, (in every case) one goes to the world of Brahman."

This system of life-stages developed in the Upanishads is found in full operation at the time when the Vedic *Kalpa-sūtras* were composed. It appears that the fourth stage of the ascetic, as affording opportunities for reaching the highest state, was growing into popularity in spite of its rigour, and it seems that many persons were embracing it without passing through the regular sequence prescribed for the four orders. Thus the passage from the *Jābāla Upanishad* quoted above says that one might enter into the fourth stage of the *parivrāj* from any of the other stages. Similarly, Baudhāyana in his *Dharma-sūtra* (II. 10. 17. 1-4) states that " according to some teachers, one may enter into the order of ascetics (*sannyāsa*) immediately on the completion of studentship, leading a life of continence and chastity (*brahmacharyavān*);" according to others, he says, a householder may adopt the life of an ascetic if he is childless, or a widower. The only condition insisted upon as a qualification for entering the order of ascetics is that a person must have completed the duties of the first *āśrama* by studying the Veda and going through the required course of discipline, so as to be established in chastity and continence. In fact, according to some social legislators, on the completion of the duties of studentship, one is declared free to enter any of the *āśramas* at his pleasure. Thus, Āpastamba (*Dh. S.* II. 9.21) says that one who has fulfilled the duties of the order of students, may, remaining chaste, (*brahmacharyavān*), pass direct into the order of the

forest-recluse on completing his studentship, or he may go forth as an wandering ascetic (*parivrāj*)." Vasishṭha (*Dh. S.* VII. 1-3) says that "a person who has studied one, two, or three Vedas without violating the rules of studentship, may enter any of the orders, whichsoever he pleases." Gautama (*Dh. S.* III. 1) also delivers himself in the same strain: "Some declare that he who has studied the Veda may make his choice which among the orders he is going to enter." Thus a student has the option of staying in his own *āśrama* up to the last day of his life as a perpetual and professed student (*naishṭhika brahmachārin*), or he may become a householder, a hermit in the forest, or an ascetic.

The stories in the Buddhist *Jātakas*, which are supposed to represent a very early state of Indian society, show how many young men, on the completion of their education, directly adopted the wandering life of the *ṛishi* and repaired to the sacred forests of the Himalayas. Thus we are told in the *Parosahassa-Jātaka* (Fausboll's edition, No. 99) that "the Bodhisattva was born in a family of Northern Brāhmins, and after completing his education in all the arts (*sabbasippāni*) at Taxila gave up all desires and adopted the wandering ascetic life of the *ṛishis* and acquiring the Five Knowledges and the Eight Attainments, dwelt in the Himalayas, where five hundred hermits gathered round him." A similar story is told in the *Tittira-Jātaka* (No. 117), *Ādichchupaṭṭhāna-Jātaka* (No. 175), *Kachchhapa-Jātaka* (No. 273), etc., etc. In the *Mahābodhi-Jātaka* (No. 528) the anchorite's life is called '*paribbājaka-pabbajjā*,' 'the ascetic life of the *parivrājaka*.'

Such indiscriminate admission of men into the ascetic order from any of the other orders, without the natural gradation through the preceding stages, was likely to draw into that order many undesirables who by their imperfect discipline were not yet fitted to be there, and the social legislators felt that this influx of immature persons into the order of homeless wanderers would tend to produce a general deterioration in the health of the society, and besides, to disturb the economic foundation of the whole social structure. They, therefore, insisted upon people passing from order to order in regular sequence, sought to press it home that the householder was the basis and support that held up the entire social frame, laid down severe punishments by way of penances for those who failed to keep up the standard of purity of the three ascetic orders of the *brahmachārin*, *vānaprastha* and *sannyāsin*, and at last pointed out that it was not indispensable for an individual to enter formally into the ascetic order, but that the highest realization was possible to a

person who stayed at home but detached himself from worldly pursuits. Thus Baudhāyana says that for a householder "the teachers prescribe the profession of asceticism after the completion of the seventieth year and after the children have been firmly settled in the performance of their sacred duties. Or a hermit in the woods may become an ascetic on finishing the special duties prescribed for him" (*Dh. S.* II. 10. 17. 5-6). He finally quotes the authority of the Veda: "It is declared in the Veda, 'Entering order after order, man becomes one with Brahman.' Now they quote also the following verse: 'He who has passed from order to order, has offered burnt oblations and kept his organs in subjection, becomes afterwards an ascetic, tired with giving alms and making offerings (II. 10. 17. 15-16).'" Āpastamba also declares: "If he lives in all these four (*āśramas*) according to the rules of the law, without allowing himself to be disturbed by anything, he will obtain salvation" (*Dh. S.* II. 9. 21. 2). Āpastamba holds a discussion about the respective merits of asceticism and the householder's duties in two chapters (*Dh. S.* II. 9. 23-24) and concludes at last: "Even though some ascetic may gain heaven through a portion of the merit acquired by his former works or through austerities, whilst he is still in the body, and though he may accomplish his objects by his mere wish, still this is no reason to place one order before the other (II. 9. 24. 15);" he quotes authority also for his opinion: "Now Prajāpati also says, 'Those dwell with us who fulfil the following duties: the study of the three Vedas, the studentship (*brahmacharya*), the procreation of children, faith, religious austerities, sacrifices, and the giving of gifts. He who praises other duties, becomes dust and perishes'" (II. 9. 24. 8). Baudhāyana combats the high opinion ascetics might hold of themselves: "Ascetics may say, 'Renouncing the works taught in the Veda, cut off from both worlds, we attach ourselves to the central sphere (Brahman).' But the venerable teachers declare that there is one order only, because the others do not beget offspring" (II. 6. 11. 26-27). Gautama also reiterates, "The householder is the source of these (*āśramas*), because the others do not produce offspring" (III. 3), and after giving a description of the four *āśramas* he concludes, "But the venerable teachers prescribe one order only, because the order of householders is explicitly prescribed in the Vedas" (III. 36). Haradatta, in commenting upon this passage, explains: "The duties of a householder, the *agnihotra* and the like, are frequently prescribed and praised in all the Vedas, Dharmaśāstras, and Itihāsas. As, therefore, the order of householders

is explicitly prescribed, this alone is the order (obligatory on all men). But the other orders are prescribed only for those unfit for the duties of a householder. That is the opinion of many teachers."

Vasishṭha emphasizes the importance of the householder over all the other orders. "A householder," says he, "alone performs sacrifices, a householder alone performs austerities, and therefore the order of householders is the most distinguished among the four," and he employs several metaphors to explain his position: "As all rivers, both great and small, find a resting-place in the ocean, even so men of all orders find protection with householders. As all creatures exist through the protection afforded by their mothers, even so all mendicants subsist through the protection afforded by householders" (*Dh. S.* VIII. 14-16). Manu adds another metaphor: "As all living creatures subsist by receiving support from air, even so the members of all orders subsist by receiving support from the householder" (III.77). Manu also repeatedly insists that the householder, as the supporter of the other *āśramas*, is the best of all: "Because men of the three other orders are daily supported by the householder with gifts of sacred knowledge and food, the order of householders is the most excellent order" (III. 78); and again, he goes on, "In accordance with the precepts of the Veda and of the Smṛiti, the housekeeper is declared to be superior to all of them; for he supports the other three" (VI. 89).

Manu goes further than the *Dharma-sūtras* by declaring, "When the householder has paid, according to the law, his debts to the great sages, to the manes, and to the gods, let him make over everything to his son and dwell in his house, not caring for any worldly concerns. Alone let him constantly meditate in solitude on that which is salutary for his soul; for he who meditates in solitude attains supreme bliss" (IV. 257-258). This he reiterates in another passage while summing up his account of the duties of the four social orders: "Having given up the performance of all rites, throwing off the guilt of his sinful acts, subduing his organs and having studied the Veda, he may live at his ease under the protection of his son. He who has thus given up the performance of all rites, who is solely intent on his own particular object, and free from desires, destroys his guilt by his renunciation and obtains the highest state" (VI. 95-96).

To understand this attitude of Manu's code in trying to dissuade the householder from a formal renunciation of the world, we have to take note of the time when the present version of Manu's code was compiled,

viz. about the second century B.C.,[1] when Buddhism had made the order of ascetics more popular and more accessible than ever before. Buddha had founded a new order of ascetics on the pattern of the ancient Brāhmaṇical ones, but while the older orthodox ascetic order had got restricted to the Brāhmin caste, Buddha threw the gates open to all castes of all ages, and he was even persuaded, though, it is said, against his inclinations, to admit into the order women also who, according to the Brāhmaṇical rules, were ordinarily permitted to pass on to the *vānaprastha* stage and no further. The whole mass of Buddhist *Vinaya* literature shows us what troubles the great Teacher took to purge his order of the abuses that such indiscriminate admission into the ascetic order was bound to produce. But the new ascetic order was attracting numerous recruits, and the missionary zeal of Aśoka, the great Mauryan Emperor, spread it far and wide. Hence the Brāhmaṇical legislators felt it incumbent upon themselves to hold up the ancient ideals and to stop this senseless rush, to the ascetic orders, of men and women not prepared for them by a necessary course of discipline and restraint; hence the urgent and repeated insistence on the cultivation of the genuine ascetic attitude even at home, as distinguished from the formal entrance into the order. Besides, the tendency of this pseudo-asceticism to lower the birth-rate in the community was considered as a criminal breach of social laws. When a young man is about to enter the world on the completion of his education, the teacher dismisses him with the injunction, " Thou must not cut off the line of children," says the *Taittiriya Upanishad* (I. 11). Manu proclaims distinctly that one who seeks salvation without discharging his debt to his fathers by begetting children, tumbles down the ladder of life—marches farther off from the goal instead of getting nearer. Thus he says: " When a man has paid the three debts, let him apply his mind to the attainment of final liberation; he who seeks it without having paid his debts sinks downwards. Having studied the Vedas in accordance with the rule, having begotten sons according to the sacred law, and having offered sacrifices according to his ability, he may direct his mind to the attainment of final liberation. A twice-born man who seeks final liberation, without having studied the Vedas, without having begotten sons, and without having performed

[1] Bühler (*Manu*, cxvii) places the date of redaction of the present code of Manu between the second century B.C. and the second century A.C. Jayaswal makes it more definite, 150-120 B.C. *Manu and Yājñavalkya*, Tagore Law Lectures, 1917, p. 37.

sacrifices, sinks downwards " (VI. 35-37). Kauṭilya in his rough and ready way condemns such a man as a criminal liable to punishment by the State: "Only a man who has lost the power of begetting children may become an ascetic after dividing his properties acquired by lawful means; otherwise he will be punished;" he also declares, " One who embraces asceticism without making provision for his children and wife, shall be punished with the first amercement; and likewise a person who administers the ascetic's sacrament to a woman (*pravrājayataḥ*);" moreover he says, " No one having the appearance of an ascetic, other than a *vānaprastha*, should a king allow to enter his villages " (*Arthaśāstra* II. 1. 19).

Notwithstanding the prohibition by Kauṭilya of initiating women into the ascetic's order, it appears from his work that there was no dearth of them in his age. The king is advised to employ an ascetic woman (*parivrājikā*) who was a poor, widowed, bold and clever Brāhmin lady desirous of earning her livelihood thereby; she would be honoured in the king's family and would frequent the houses of the chief ministers (*mahāmātrakulāni*), and work as a secret spy (1. 12. 8). Ascetic women (*pravrajitāḥ*) appear to have been employed, by the Superintendent of Weaving, in spinning (II. 23.40).

Kauṭilya enumerates the duties particularly appertaining to the four *varṇas* and the four life-stages, and he calls upon the king to maintain a wholesome order in society by not allowing people to swerve from the duties proper to their caste and grade (*svadharma*), because, he declares, it is the discharge of one's own duties that leads to heaven and eternal bliss, and the reverse would destroy society by creating confusion and chaos (*Arthaśāstra*, I.3). Kauṭilya also warns the king that " Executive authority, if badly administered, under the influence of lust, anger, or ignorance, would rouse the ire even of the forest-dwelling hermits and wandering ascetics, not to speak of householders " (I.4). We learn also from Kauṭilya how forest-life was made possible for the hermits and ascetics by the protection afforded by the king: it is the duty of the king, says he, " to bestow upon Brāhmaṇas forest areas for the study of the Vedas (*brahmāraṇya*), and also for growing *soma-plants* (*somāraṇya*), and besides, forests for practising austerities (*tapovanas*) to the hermits (*tapasvin*) according to their family names (*gotras*), making provisions for safety from disturbances proceeding from stationary (*sthāvara*) or moving (*jaṅgama*) sources of danger " (II.2). The *brahmāraṇyas* were apparently meant for the recitation and study of the Āraṇyaka portions of the Vedas, and in such forest habitations the Upanishads must have

been composed and discussed. The *soma*-plant, so very necessary for the sacrifices, had already grown very rare when the Brāhmaṇa portions of the Vedas were composed, and required special areas for their cultivation. The *tapovanas* or 'groves of austerities' of which we read so often in the epics and the Purāṇas, appear to have been named after the *gotra* or family names of the hermits dwelling there, and not that the founders of the *gotras* were themselves living there at the time referred to, as Mr. K. P. Jayaswal has pointed out (*Hindu Polity*, II.109).

On the condition of Indian society in the fourth century B.C., when Kauṭilya was writing his work on Polity, we have the independent evidence of Megasthenes, the Greek ambassador at the Mauryan court, who speaks of the two orders of ascetics (*śramaṇas*). Thus we read in Strabo, "Of the *sarmanes* Megasthenes tells us that those who are held in most honour are called the Hylobioi. They live in the woods, where they subsist on leaves of trees and wild fruits, and wear garments made from the bark of trees. They abstain from sexual relations and from wine. They communicate with the kings, who consult them by messengers regarding the causes of things, and who through them worship and supplicate the deity. Next in honour to the Hylobioi are the physicians, since they are engaged in the study of the nature of man. They are simple in their habits, but do not live in the fields. Their food consists of rice and barley-meal, which they can always get for the mere asking, or receive from those who entertain them as guests in their houses....This class and the other class practise fortitude, both by undergoing active toil, and by the endurance of pain, so that they remain for a whole day motionless in one fixed attitude" (McCrindle: *Megasthenes*, pp. 101-2). The Hylobioi have been identified with the hermits in the third stage, and the physicians with those in the fourth. Megasthenes also says, "Women pursue philosophy with some of them, but abstain from sexual relations" (*Ibid*. p. 103). These may be the women in the *vānaprastha* stage who practised austerities with their husbands, or they may be ladies studying the Veda (*brahmavādinis*).

That the ideals held up by the *Dharma-sūtras* for the ascetics were not merely theoretical abstractions, but were actually realized in life, appears from the account given by Megasthenes of Dandamis, the Indian philosopher, living near Taxila: "When messengers from Alexander invited him to go to the son of Zeus, with the promise of gifts if he complied, and threats of cutting off his head if he refused, he did not go. Alexander, he said, was not the son of Zeus, for he was not so much as

master of the larger half of the world. As for himself, he wanted none of the gifts of a man whose desires nothing could satiate; and as for his threats, he feared them not; for if he lived, India would supply him with food enough, and if he died, he would be delivered from the body of flesh now afflicted with age, and would be translated to a better and a purer life. Alexander expressed admiration for the man, and let him have his own way" (*Ibid*. pp. 106-7). Another ascetic, Kalanos, however, yielded to the temptations, and 'became a slave to the table of Alexander,' and followed the Macedonian army from Taxila; he was on this account condemned by his countrymen; but he made amends for this lapse of his by burning himself on a funeral pyre in the presence of the whole Macedonian army, without evincing any symptoms of pain.'

SAṀSKĀRAS—SACRAMENTS

The Indian social legislators took cognizance of the whole life of man, because, as we have said, his life was co-extensive with *dharma* (duty), and for them a man's life commences, not with his birth, but from the moment he is conceived in his mother's womb. The sacramental rites (*saṁskāras*) that specially appertain to him, that are calculated to sanctify his body and purify his mind and thus qualify him for taking his place in the community, commence from that moment. Laws of Eugenics appear to have been investigated and discovered, and applied in practice by definite social legislation, with a view to getting religious, God-fearing citizens, pure in body and mind. The sacred purificatory rites were to be performed from conception onwards, from time to time in the course of his life, up to his marriage, when he becomes a full-fledged citizen, fit to take up the duties and responsibilities of a householder and occupy his proper place in the social organization, and finally to realize the ultimate goal of human life—the union with the Supreme Brahman. Manu makes the significance of these purificatory rites very clear: " With holy rites prescribed by the Veda must the ceremony on conception and other sacraments be performed, for twice-born men, which sanctify the body in this life and after death. By burnt oblations during the mother's pregnancy, and by the *jātakarman* (the ceremony after birth), the *chauḍa* (tonsure), and the *mauñji-bandhana* (the tying of the sacred girdle of *muñja* grass, *i.e.* initiation to Veda-studies), is the taint removed from

' This is taken from the fragment of Strabo (No. XLIV). Fuller accounts with more details are in fragments from other authors who have quoted from Megasthenes at greater length; see McCrindle: *Megasthenes*, pp. 115-116 and 120-129.

both parents, removed from twice-born men. By the study of the Veda, by vows (undertaken by the student when he learns particular portions of the Vedas), by burnt oblations (that is, the daily offerings in fire), by the recitation of the sacred texts, by the acquisition of the threefold sacred science, by offering (to the gods, *ṛishis* or seers and manes), by the procreation of sons, by the great sacrifices, and by *śrauta* rites, this human body is made fit for union with Brahman" (*Manu*. II. 26-28). After marriage also, there are some *saṁskāras* of which sacrifices form a great part. Gautama and Vaikhānasa enumerate forty of these purificatory rites.

Gautama, however, while speaking of the necessity for a person to be sanctified by these forty sacraments, takes care to point out that the mere formal performance of these rites would be of no efficacy in securing the ultimate goal of human life, unless they have developed in him the great qualities of the inner self, the *ātmaguṇas*, viz. compassion on all creatures, forbearance, freedom from spite or envy, purity (of mind, body and speech), freedom from over-exertion (*anāyāsa*), auspiciousness (*maṅgala*), performance (of praiseworthy deeds and avoidance of blamable ones), freedom from depression of spirit combined with pleasure in sharing with others whatever one possesses (*akārpaṇya*), and freedom from covetousness combined with satisfaction with whatever one may possess (*aspṛikā*). After enumerating these eight great qualities and the forty sacraments, Gautama declares, "He who is sanctified with these forty sacraments, but whose soul is destitute of the good qualities, will not be united with Brahman. But he, forsooth, who is sanctified with only a few of these forty sacraments, and whose soul is endowed with the eight excellent qualities, will be united with Brahman and dwell in his heaven" (*Dh. S.* VIII. 21-23). Vyāsa in his *Dharma-śāstra* defines the eight great qualities at some length, and declares that one possessed of all these qualities would reach the sphere of Brahman and also by the performance of the purificatory rites (Vyāsa quoted in *Maskari-bhāshya* on the above *Sūtras* of Gautama).

Hārita distinguishes between two groups of *saṁskāras*—*brāhma* and *daiva*: one sanctified by the first group of rites (including *garbhādhāna*, etc.) attains to equality and union with the *ṛishis*, while another purified by the *daiva* sacraments acquires equality and union with the gods (*Hārita Smṛiti* quoted in *Parāśara-Mādhava*).

There are three, or according to some, four, sacramentary rites before birth. One of them, *puṁsavana*, is performed specifically for the birth

of a male child, but in all the other rites also, including the *soshyanti-homa* performed just before the moment of birth, there is manifest a strong desire for the birth of a male child. The ceremony of *puṁsavana* is to be celebrated when the moon enters a constellation with a male name, and the articles used in the rite all suggest the male. The ceremony of *sīmantonnayana*, or 'parting of the pregnant wife's hair,' is similarly to be performed when the moon is in a constellation with the male name, and the words denoting the implements used in the ceremony should also be of the masculine gender (*Śāṅkhāyana Gr. S.* I. 22.6). The desire for a male child, so predominant in the Indian mind, seems to have had a reason. The Indo-Aryan family organization being patriarchal, a son was necessary for the continuance of the family line, for performing the necessary funeral rites, for presenting oblations of food and water for the satisfaction of the manes and also for succeeding to the family property. Even in the *Ṛig-Veda* we find this desire for a son expressed in many passages. In the marriage-hymn (*Ṛ.V.* X.85), the verses of which are even now recited at the marriage ritual, the bridegroom prays, "Grant, O Indra, that this damsel may have excellent sons (*suputrā*) and great good fortune," and then turning to the bride he urges, "Be thou the mother of heroic sons"; again he implores in the same hymn, "Indra, showerer, make her the mother of excellent sons, make her pleasing to her husband, grant her ten sons, make her husband the eleventh" (*Ṛ.V.* X. 85. 25, 45). Viśvāmitra prays for sons to the god Agni repeatedly in a number of hymns: "May there be sons and grandsons born in our race, O Agni, and may thy goodwill be ever upon us." This verse forms the burden of at least seven hymns in the family book of the Viśvāmitras in the *Ṛig-Veda* (III. 1. 23; 5. 11; 6. 11; 7. 11; 15. 7; 22. 3; 23. 5); and this same verse is found in the *Sāma-Veda* (I.76) and all the recensions of the *Yajur-Veda*. Another verse says, "A man who offers presents to Soma is rewarded by that god with a heroic son who is able in affairs, skilful in domestic concerns, assiduous in worship, eminent in society, and who is an honour to his father." Vasishṭha, in his own family book in the *Ṛig-Veda*, prays: "When the wives approach us, may the god Tvashṭṛi, with dexterous hands, grant us heroic sons" (*Ṛ.V.* VII. 34. 20). In another hymn, Vasishṭha speaks strongly against the adoption of a son from a stranger's family: "That is no offspring which is begotten by another; it is only the ignorant who think so. Lead us not away from the paths of lineal male descent. A stranger, that is, one begotten of another, is certainly not to be adopted,

although worthy of regard. Such a one is not to be contemplated even in the mind as fit for acceptance, for verily he returns to his own house. Therefore let there come to us a son new-born, who would strike terror into others and be victorious over foes" (VII. 4. 7-8). It seems from this that in the Ṛig-Vedic age the adoption of a son was known as a prevalent practice, but was not looked upon with favour.

The *Atharva-Veda*, which gives us glimpses into the secular life of the early Vedic times, also shows the desire for sons in several of its hymns, and many of these verses are used at the ceremonies of impregnation and male conception (*garbhādhāna* and *puṁsavana*): "O Dhātar, O Tvashṭar, O Savitar, O Prajāpati, do you place in the womb of this woman a male son endowed with the greatest beauty to be born in the tenth month" (*A.V.* V. 25. 10-13); "Prajāpati, Anumati, Sinīvālī, have shaped (a son), may he put elsewhere the birth of girls, but may he place here a male" (*A.V.* VI. 11. 3). Gobhila in his *Gṛihya-sūtra* (II. 7. 14-15) prescribes that when the wife is in labour, the husband or the priest strews *darbha*-grass round the fire that has been ignited, and sacrifices two *ājya*-oblations with two verses (*Mantra-Br.* I. 5. 6, 7), and he also mutters, 'A male he will be born, N.N. by name,' pronouncing a name which is kept secret (lest the enemies should laugh and jeer at him, adds a commentator).

The *Aitareya Brāhmaṇa* (VII. 15) quotes several verses, apparently very ancient, about the blessings conferred by a son. The sage Nārada answers a query by King Hariśchandra of the Ikshvāku race: "A debt he pays in (having) him and immortality he attains—that father who seeth the face of a son born living. The delights in the earth, the delights in the fire, the delights in the waters of living beings, greater than these is that of a father in the son. By means of a son have fathers passed over the deep darkness. The self is born from the self. The son is a ship, well found, to ferry over. What is the use of dirt, what of goat-skin, what of long hair, and what of fervour? See a son, O Brāhmaṇas, this is the world's advice. Food is breath, clothing a protection, gold an ornament, cattle lead to marriage, a wife is a comrade, a daughter a misery, and a son a light in the highest heaven. The father entereth his wife—having become a germ he entereth the mother; in her becoming renewed, he is born in the tenth month. A wife has her name of *jāyā*, since in her he is born again. A sonless person cannot attain heaven." Similarly, a passage in the *Śatapatha Brāhmaṇa*

(IX. 4. 14-20) describing the ceremony of *garbhādhāna* evinces the strong desire for getting a male child.

STUDENT-LIFE—MEANS AND METHODS OF EDUCATION

Education was compulsory for every youth of the three Aryan castes in order that he might participate in the magnificent heritage handed down by the mighty thinkers of old, the *ṛishi*-builders of Indian civilization, and specially, that his advance, step by step, towards the realization of the supreme ideal of human life might be ensured. Hence student-life was a life of *brahmacharya*—of rigorous discipline of body and mind, which would harden the physical system to go through austerities without demur, and drill the mind in the exercise of the moral qualities of self-control, self-denial and self-sacrifice. In this scheme of Indian education, therefore, discipline and work occupied the first place, and mere book-learning was of minor importance. The *Chhāndogya Upanishad* (VIII. 15), distinctly lays down that the student, living in the household of his teacher, is to study the Veda "in the leisure time left from the duties to be performed for the preceptor." The Indian system of education was education through work, something quite distinct from mere book-education, acquisition of some truths by the learner and owned by him as a possession; it aimed at the development of the inherent potential faculties through work—at the growth of a consciousness of strength acquired by overcoming resistance. We all know the story told in the *Mahābhārata* (I. 3) how Āruṇi of the Pañchāla country, failing to stop the inrush of waters into his teacher's field, laid himself down at the breach in the dike and continued there for hours until he was discovered there by the teacher who gave him the title 'Uddālaka' as he came up in obedience to his call. This one act of the young learner was enough to convince the teacher that his education was complete, and he discharged him at once with the blessing, "All the Vedas will come out clear to you, and also the whole literature on *dharma* or duty," and whoever has read the Upanishads knows that Āruṇi, the Uddālaka, of the Pañchāla country, was one of the greatest seekers of truth, pre-eminent for *Brahma-vidyā*.

Reverence for the teacher and obedience to his behests form the indispensable requirements of a learner; the student must practise the spirit of obedience and cultivate reverence; but if the heart does not go out to the performance of the deed, it is an empty formality. A well-known passage of the *Saṁhitopanishad-Brāhmaṇa* (ch. III) quoted in

the *Nirukta* and in the *Dharmaśāstras* (*Vasishṭha, Vishṇu, Manu,* etc.) gives expression to this fundamental principle of the Indian system of education very beautifully: "Science (*vidyā*) approached the teacher versed in *Brahma-vidyā* (Brāhmaṇa), and charged him thus: 'Preserve me, I am verily thy treasure; deliver me not to one who is full of envy and discontent, one who is not straight in his conduct, nor to one of uncontrolled passions—thus shall I be possessed of strength and vigour (*viryavati*). But deliver me, as to the keeper of the treasure, to him whom thou shalt know to be pure, attentive, intelligent, firm in chastity; who will not grieve thee, nor revile thee. The man who fills his ears with truth, frees him from pain, and confers immortality on him, the pupil shall consider as his father and mother; him he must never grieve nor revile. As those scholars who after receiving instruction do not honour their teacher by their speech, in their hearts, or by their deeds, will not be of profit to their teacher, even so that sacred learning which they acquired will not profit them.'"

The young learner was to imbibe the ideal from his teacher by silent influence, from the very atmosphere which he breathed at his teacher's house. The atmosphere of sacrifice, of discipline, of plain living and high thinking, which surrounded him, would rouse in him an active regard for the ancient ideals of which he read in his books, and this sense of respect would convert itself into an active force, shaping anew the course of his daily existence; thus would he assimilate the fruits of his education. One great object of Indian education was to give the students the right sort of mental training, to form right and firm convictions, to make their lives regular and constant, so that they might not be thrown off their course by every passing sentiment, to ballast their lives, so to speak, that they might not be tossed about by the breath of every passing idea or fancy.

Education was imparted not for finding a career for a boy—that was fixed for him by his birth, but for his spiritual growth; the ceremony of *upanayana*, marking the beginning of education, was regarded as a second or spiritual birth (*Vas. Dh.* II. 3-5; *Āpas.* I. 1. 1, 13-17, etc.). 'This birth for the sake of the Veda ensures eternal rewards both in this life and after death,' 'it is exempt from age and death' (*Manu.* II. 146-8). Hence the age for the commencement of the discipline was determined according to the spiritual purity each lad was expected to develop. For a Brāhmin boy who was expected to take up his place in the social organism as a guardian of the national culture, to take care

of the spiritual welfare of the community, and to set an example of ideal Aryan life to the other three classes, this age was fixed by the *Gṛihya* and *Dharma Sūtras* ordinarily at the eighth year from conception; but if it was intended that he should shine in *brahmavarchas* (splendour of the Veda), that is, attain special pre-eminence in sacred knowledge, then it was to be so early as the fifth year from conception, (*Gaut.* I, 5-7, etc.). That is, a Brāhmin boy is to begin the severe life of discipline of the *brahmachārin* at the tender age of four from birth. In no case should the initiation of a Brāhmin boy be deferred till after the sixteenth year. In the case of the ruling and commercial classes, the final limit was fixed at a more advanced age (22 and 24). Failing to be initiated within this limit, an Aryan youth forfeited his claim to initiation in the study of the Veda, and became an outcaste from society whom no decent man would care to associate with. Neither should any one accept such *vrātya* (degraded) youths as pupils, nor teach them, nor associate with them, nor form, says Gobhila, matrimonial alliances with them. The descendants of such men as have forfeited the *sāvitrī* (a sacred text) for three generations are excluded from sacraments (*saṁskāras*), and to regain admission into Aryan society they must go through very arduous and painful penances and purificatory rites such as the *vrātyastoma*. In the Buddhist *Jātaka* stories we find that Brāhmin and Kshatriya youths who had neglected their education in early years, felt it incumbent to commence it at sixteen. The Hāthigumphā Inscription on the Udaygiri rock records that Prince Khāravela of Kaliṅga, about the second century B.C., passed fifteen years in boyish sports and in the sixteenth year his education was commenced.[1]

Besides the usual discipline which was compulsory after initiation, a student had to undergo special courses of discipline, to take up special vows (*vratas*) when he studied particular portions of the Vedic literature. Thus, for example, before a student began to study the *mahānāmnī* or *śakvarī* verses forming a supplement to the *Sāma-Veda*, he had to prepare himself by keeping a vow, the *śakvarī vrata*, for twelve, nine, six, or at least three years. In case his ancestors also had studied these verses, this period might be reduced to one year. Among the many duties connected with this vow, the student was required to wear a single cloth, and that a dark one, and eat dark food; he should keep standing during the day-time, and pass the night sitting; when it rained he should not seek cover; he was not to get into a boat unless his life was in danger,

[1] *J.B.O.R.S.*, Vol. III, p. 425 ff. and Vol. IV, p. 364 ff.

that is, he had to cross rivers by swimming; after he had prepared himself by these and other austerities, the verses were recited to him. Notwithstanding their hardships, these vows were far from unpopular. Mothers while suckling their babies at the breast urged their sons, 'Endeavour, my little darlings, to accomplish the *śakvari-vrata*,' as we learn from an ancient passage in the *Rauruki Brāhmaṇa* quoted by Gobhila in his *Gṛihya-sūtra* (III. 2. 7-9). Other vows involving a more or less severe course of discipline had to be undertaken to entitle the student to study other parts of the sacred literature, until he was discharged by his teacher.

When a young man got the permission of his teacher to retire from student-life, he celebrated his retirement by a ceremonial bath (*samāvartana-snāna*), and was henceforth called a *snātaka*. He was considered to have fully completed his education if he was a *vidyā-vrata-snātaka*, that is, if he had finished his study as well as fulfilled all the vows properly and well; he would be a mere *vidyā-snātaka* if he had acquired the knowledge of the Vedas but not fully accomplished his vows, or even a *vrata-snātaka*, by fulfilling the vows but not finishing the Vedas. The first ranked highest; the other two were of equal status. Mere acquisition of knowledge without the proper discipline was not given a high place in the Indian system of education.

A magnificent address by the teacher to the student on the eve of his retirement has been preserved in the *Taittiriya Upanishad* (I. 11), embodying noble maxims told in words unique for their strength, brevity and vigour. We read in this Convocation address, as it were, of the Vedic Age: "After having taught the Veda, the teacher instructs the pupil: 'Speak the truth. Do thy duty (*dharma*). Neglect not the recitation of the Veda (*svādhyāya*). Bring thy teacher a present that pleases him, and then beware not to break off the line of children. Swerve not from truth. Swerve not from duty. Disdain not what is good (to you). Deviate not from (the path to) greatness. Neglect not to recite the Veda for yourself, not to teach it (to others). Neglect not the discharge of thy duties to the gods and the Fathers. Be thy mother to thee like unto a deity. Be thy father to thee like unto a god. Be thy teacher to thee like unto a god. Be thy guest to thee like unto a god. Whatever acts are above reproach, those should be regarded, not others. Whatever acts were good in our conduct, those shalt thou respect, and not the others. Whatever Brāhmaṇas are better than ourselves, their fatigue shalt thou soothe by offering a seat. Give thou

must, with respect, and not without respect, with joy, with modesty, with friendliness (as a social duty—*saṁvid*)...This is the commandment. This is the instruction. This is the hidden import of the Veda (*vedopanishat*). This is the ordinance. Thus shalt thou act with worshipful regard. Thus should this verily be observed with worshipful reverence.' "

That this standard of life thus held up by the teachers bore ample fruit is testified by the accounts the students gave of themselves in the actual life of the society, as organic parts of the Indian social structure. We learn from Megasthenes (4th century B.C.), that " the Brāhmaṇas neither love gold nor fear death " (Fragment LV). Of people in general, including all grades of individuals in society, the same foreign observer records, " Truth and virtue they hold alike in esteem. They seldom go to law," etc. (Fragment 27). Similar testimony is borne by other foreign observers who had the occasion to visit India. That the ancient Indian system did develop the inventive faculty, the power of making new discoveries through persistence in struggling against difficulties, is manifest from the mighty achievements in the departments of Art, Astronomy, Mathematics, Chemistry, Medicine, etc. and especially in Philosophy and Metaphysics. This disproves the fear that the memorization of the Vedas would tend to develop readiness of memory to the exclusion of deliberate judgement. The memorization of good literature of genuine intrinsic merit is considered even by modern educationists as an indispensable element of sound education. In India it enabled the students to understand and respect their own civilization and culture, the magnificent heritage left by their forefathers.

THE HOUSEHOLDER—GṚIHASTHA

When a young man, after the completion of his studies, comes out as a *snātaka* or graduate, he behaves himself in a way as would be decent conduct for an educated man, he " assumes a dignified demeanour, in short," as Gobhila (III. 5) puts it. He is honoured wherever he goes; " a great being, indeed, is a *snātaka*," says Aśvalāyana (III. 9. 6); on the road everyone makes way for him, and it is said that even if the king and the *snātaka* meet, the king shows him respect and yields him precedence (*Vas.* XIII. 59). He is welcomed with a drink of honey-mixture (*madhuparka*), when he visits any house, and he readily gets a bride.

As soon as a man marries and sets up as a householder, he enters a life of sacrifices. He must realize that the householder is the economic support of the entire social strucutre composed of the four orders or *āśramas.* He is the bread-winner of the whole social family. He should, therefore, be ready to share whatever he earns with the other three *āśramas;* there should be a fair distribution of the wealth produced or earned by him; and he must earn it by honourable means, by following irreproachable occupations. He who prepares food for himself alone damns himself for evermore; woe to him if any one who begs food of him goes away disappointed. He should not hoard wealth (*Manu.* IV. 1-8), he should not allow it to narrow and harden his soul, to dry up the spring of noble sentiment in the heart by a development of the spirit of selfish enjoyment; but by charity, by liberal offerings to the gods, to men, to all sentient beings on earth, he expands his soul, always keeping in sight the ultimate goal of human life, the realization of the Supreme Brahman. Every day of his life he has to perform the five great sacrifices as a regular duty, he has to offer to the gods and the manes, to feed strangers who have never before been to his house (*atithis*), to give to all animals—birds, beasts and insects—out of the food that is prepared for himself. The householder cannot sit down to his own meal until he has made these offerings. At the same time, he must study the Vedas, the first thing in the morning, that the traditional ideals might not be forgotten, that he might discharge the debt he owes to the ancient *rishis* who embodied the truths discovered by, or revealed to, them, in easily accessible works.

Sacrifices were of immense import in the life, outer and inner, of the Indians in ancient times; their importance has been great in the evolution of the religious and philosophical thought of the Indo-Aryans. The Vedas, including the earliest hymns, were compiled in their present form to aid in the performance of these sacrifices. *Yajña,* sacrifice or 'renunciation of things in favour of the gods,' as Kātyāyana (*Śr. S. I.* 1. 2) puts it, was the earliest form of religious exercise of the Vedic Indians. In this worship no images were required, but the worshipper renounced his claim to things by placing them in the fire, an unquestionable indication of absolute renunciation. As each offering was taken up, he said, "This is offered to Agni (Indra or Soma), it is no longer mine" (*idam agnaye, na mama*), etc. He offers things dearest to him to the gods that bestow upon him everything on earth, and what is dearer than one's self? But weak mortal as he is, he is unable to offer

his own self, he makes a vicarious offering instead. The animal that does duty for him at the sacrifice, stands as a substitute for the worshipper himself, so much so, that the Brāhmaṇa texts hold long discussions as to whether it would be right and proper to eat the flesh of the sacrificial animal, as it has verily been changed, transubstantiated, into actual human flesh. A unity of principle may be discovered, further, between the Christian rite of the Eucharist and the practice of eating the remnant of the offerings at the sacrifice—the *iḍā*, as it is called—by the worshipper and all the officiating priests, thus establishing a unity among them and the deities worshipped. At the end of the sacrifice, liberal gifts were made to the officiating priests and others, sometimes amounting to the whole of the belongings of the sacrificer (*yajamāna*). By these renunciations he becomes prepared for the greater renunciation, afterwards, of house and home, of son and wife, of everything that binds him to things of the earth, and for entering into the bliss of the Brahman. "They acquired immortality by renunciation," say the Upanishads (*Kaiv.* 2). Even in the sixth century we find Harshavardhana Śīlāditya convoking "a grand assembly of deliverance (*mahā-moksha-parishad*), and distributing there the stores of his treasuries in charity" (Yuan-Chwang: *Life*, Book II).

The duties (*dharmas*) of the householder are enumerated in every detail in the Indian sacred literature, as regards his daily life, as well as his conduct on special occasions, because, as we have said, his life was co-extensive with *dharma*.

FAMILY-LIFE—POSITION OF WOMAN

Marriage is a sacrament and not a contract; it is a sacred bond of union formed between two persons, a male and a female, for their eternal progress through the performance of their duties, through *dharman*. "The relation between the husband and the wife is through *dharman*," *i.e.* for the performance of their joint duties, says Āpastamba (*dharmāddhi sambandhaḥ*—II. 13. 12). In the marriage hymn of the *Ṛig-Veda*, the groom tells the bride, "I seize thy hand for great good fortune, that thou mayst live with me as thy husband, till decay comes upon thee. The gods Bhaga, Aryaman, Savitṛi and Purandhi have bestowed thee upon me for carrying on the duties of the householder" (*R.V.* X. 85. 36). In a similar passage in the *Atharva-Veda* (XIV. 1. 50-51), the husband assures the wife, "The gods have given thee to me for carrying out the duties of the householder," and he adds, "Thou

art my spouse through *dharman*, and I thy house-lord (*gṛihapati*)." In the ritual of marriage this relation through *dharman* is insisted upon (*Manu*. III. 29) and also the bestowal by the gods; "As a gift from the gods does the husband receive the wife, and not from a desire of his own, and doing what is agreeable to the gods, he shall always support the faithful wife" (*Manu*. II. 95). The marital union is a divine dispensation, a heaven-ordained relation; therefore no one belonging to either of the parties has a right to dissolve it—man cannot and ought not to separate those whom the gods have joined together. She stands beside him in life, through death, in the gladder life beyond; she is not separable from him, but a part of his very self.

When the young man carries home his wife in a chariot (*vi-vah*), the nuptial fire is carried with him, and is set up in his house as his domestic fire (*gṛihya-agni*); it is the symbol of his married life. It has to be kept up till he retires from the world; from it the wife lights the kitchen fire, in it he offers oblations (*agnihotra*) every day, morning and evening, jointly with his wife. On all occasions, whenever he makes any offerings to the gods, according to the approved form of worship in the Vedic age, by sacrificing in fire, she always participates and co-operates with him; it is a duty which they have in common and therefore has to be discharged jointly (*Manu*. IX. 96). The position of the wife in the Vedic age was, therefore, very high. "A man offers oblations to the gods jointly in a pair," says he *Ṛig-Veda* (I. 173. 2); they are like a pair of horses yoked to a chariot (*Ibid*. VIII. 33. 18). The seer Atri expressly tells Agni, "Married pairs (*mithunāsaḥ*), worn out by devout rites, jointly offer abundant sacrificial food, Agni, to thee who art mighty" (*Ṛ.V*. V. 43. 15); and Ghoshā, the lady seer, speaks of the loving husbands who make their wives sit down at the sacrifice (*R.V*. X. 40. 10). The *Taittiriya Brāhmaṇa* (II. 2. 2. 6) declares, "There is no sacrificial rite for a man who is without a wife," and Pāṇini (IV. 1. 33) tells us that the wife is called 'patni' because of her participation at the sacrifice (*yajña-saṁyoge*).

The Ṛig-Vedic hymns speek feelingly of the couple who are united in mind (*dampati samanasā*), and the gods are invoked to shower their blessings on such a pair as associated together they make their offerings to the gods. Thus a hymn attributed to Manu, the father of the human race, prays: "Gods, may the husband and wife, who with one mind purify the libations and offer them to you, who propitiate you with *soma*, ever mixed with milk, may they, constantly associated, acquire appropriate

sacrificial viands; may they be able to offer sacrifice; may they never be wanting in food (given by the gods). They retract not their promises to the gods, they withhold not your praise, but offer abundant sacrificial food. Blessed with youthful and adolescent offspring, and both having their persons richly ornamented, they pass happily their whole life. Offering acceptable sacrifices, obtaining the wealth they solicit, presenting gratifying oblations to the gods, for the sake of immortality enjoying personal union, the wife and husband worship the gods " (*Ṛ.V.* VIII. 31. 5-9). A verse thanks the god Agni, for making the husband and wife of one mind (*Ṛ.V.* V. 3. 2), and another (VIII. 84. 7) addresses Agni himself as identified with the couple, meaning that through him, that is, through oblations offered in fire, the husband and wife are united. The streams of melted butter flow towards Agni, even like wives, graceful and smiling, and of one mind with their husbands (*Ṛ.V.* IV. 58. 8). This spirit of union comes out beautifully in the marriage ritual, when after pacing the seven steps together, the bridegroom addresses the bride: " A friend be thou, having paced these seven steps with me; the couple who paced seven steps together did become friends. May I gain thy friendship, may I never fall off from thy friendship; may thou never fall off from my friendship. Let us unite together; let us resolve together that bound in love, and ever radiant in each other's company, meaning well towards each other, sharing together all enjoyments and pleasures, we may unite our thoughts, our duties and our ideals " (*Āpastamba Mantra-Brāhmaṇa*. I. 3. 14).

In a hymn of the *Atharva-Veda*, we find the husband and the wife offering a prayer for unity of mind: " The eyes of us two be of honey-aspect; our face be ointment; put thou me within thy heart; may our mind verily be together " (*A.V.* VII. 36). The *ṛishi*-author of another hymn inspires the members of a family with unity of mind and heart: " Like-heartedness, like-mindedness, non-hostility do I make for you; do ye show affection, the one towards the other, as the inviolable cow towards her calf when born. Be the son submissive to the father, like-minded with the mother; let the wife to the husband speak words full of honey, beneficent. Let not brother hate brother, nor sister sister; becoming accordant, of like courses, speak ye words auspiciously. Your drinking be the same, in common your share of food; in the same harness do I join you together; worship ye Agni united, like spokes about a nave. United, like-minded, I make you, of one bunch, all of you, by

my conciliation; be like the gods defending immortality (*amṛita*); late and early be well-willing yours" (*A.V.* III. 30. 1-3, 6-7).

The tender affection of the devoted wife comes out in many a metaphor while the poets of the hymns are speaking with rapture of the gods whom they not only revere but also adore and love. "The minds of the wise cling to thee, Indra, as affectionate wives to a loving husband" (*Ṛ.V.* I. 62. 11), says a seer. Viśvāmitra calls up an image of a happy home while dismissing Indra after a *soma* libation: "Thou hast drunk the *soma*, Indra, hasten thou to thy abode, a sweet wife awaits thee in thy happy home" (*Ṛ.V.* III. 53. 6). Agni, on whom all endearing epithets are showered by the Ṛig-Vedic seers, "is like unto a wife, above reproach and beloved of the husband" (*Ṛ.V.* I. 73. 3); Agni is "like a wife on a couch, enough for all happiness" (*Ṛ.V.* I. 66. 3); the sacrificers raise an altar for Agni "as a wife, desirous of the love of her husband, prepares a bed for him, decorated in beautiful attire" (*Ṛ.V.* IV. 3. 2). The goddess of Dawn, Ushas, resplendent in her beauty, inspires the poetic fervour of the Ṛig-Vedic seers who speak of her feelingly as a virgin, as a youthful bride decked with every grace, as a lovely wife who displays her charms to win her husband's affection, as a wakeful matron who rises betimes and wakes up the laggards, and so on.

The wife is identified with the Vedic Indian's house and home; "The wife is verily the home," declares a seer (*Ṛ.V.* III. 53. 4) and the *Śatapatha Brāhmaṇa* (III. 3. 1 10) asserts: "The home has verily its foundation in the wife" and we have an echo of the same sentiment in later literature (*Pañchatantra* IV. 81): "The house (one lives in) they do not call the home (*griha*), the mistress of the house is the home (proper)."

The Ṛig-Vedic hymns present portraits of a noble band of ladies illustrating the high position enjoyed by women in the Vedic age, as seers and sacrificers, their independence and courage, and withal their womanly love and conjugal devotion. There is no exaggerated colouring in the delineation of these characters; they are drawn to life with a few masterly strokes, in a brief dialogue, a short prayer, or even a single verse of impassioned utterance. In the first place we may mention the dignified matron, Viśvavārā, a lady of the Atri family, who in her short but vigorous hymn of six verses reveals herself as a lady of forceful personality, dignified and restrained, making offerings to the gods for

herself, and withal she shows her woman's heart praying for an atmosphere of love and concord in her home. Let her speak for herself: "Viśvavārā steps on to the fire, facing the east, with the sacrificial ladle full of the oblations of butter, chanting the glories of the gods with hymns of obeisance (*namobhiḥ*), as the full-flaming fire throws out his beams in the glowing firmament and shines far and wide facing the dawn" (*Ṛ.V.* V. 28. 1). She prays to the Fire-god, "Agni, do thou repress our foes to ensure our great good fortune; let the riches brought by thee be of the highest and best. Make perfect, O Agni, the wedded life of the wife and the husband by mutual concord and restraint, and do thou overpower the strength and energies of all those who would be hostile to us" (*Ṛ.V.* V. 28. 3).

Next, we have the picture of Indrasenā Mudgalānī, a heroic lady who bravely drove her chariot and helped her husband "in winning hundreds and thousands of cattle well-pastured," in a memorable conflict in which both of them took part. It is probable that the fight was with a band of robbers who had lifted their cattle, as the Indian tradition puts it, or it may refer to a hotly contested chariot-race in which the husband and the wife succeeded in winning the rich wager of cattle, as some modern scholars hold. Her husband's hymn thus speaks of her exploits: "The wind blew up her vesture as driving in her chariot she won a thousand; Indrasenā, the wife of Mudgala, got mounted upon a chariot in the quest of the cattle—she won them in the conflict...The bull had been yoked for the overthrowing of the opponents; the charioteer with long (flowing) hair made him roar; as the irresistible bull dashed on with speed, the opponents rushed towards Mudgalānī...With her as charioteer, rejoicing like a long separated wife meeting her husband, swelling like a cloud pouring down rain upon the earth, and filled with the desire of winning the cattle, shall I win in this contest; may good fortune and provisions be our share" (*Ṛ.V.* X. 102. 2, 6, 11).

Then again, the sorrows of Lopāmudrā draw our sympathy, as she pines away hungering for the company of her husband (Agastya) who is intent upon austerities and penances. The four short verses of the dialogue beween the husband and the wife give a picture of domestic life which was not perhaps a very unusual one in the Vedic age. Thus cries out Lopāmudrā: "For many a long year in the past, both by day and by night, as well as in the mornings, have I been wearing

myself out serving thee diligently; now decay, following upon advanced years, impairs the beauty of my limbs. May not the husbands meet their wives? Those ancient sages that spread the truth far and wide, who forsooth talked with the very gods, did beget children, nor did they break their penances thereby, because these came not to an end. Therefore should wives, the partners at the sacrifices, be approached by their husbands" (*Ṛ.V.* I. 179. 1-2). Agastya answers that their penances have not been in vain, the necessary training in restraint has been acquired; with the help of the gods, they might now trust themselves amidst the enjoyments of the world. He says, "In this world we shall win the victory in the conflict with a hundred temptations, if we exert ourselves mutually together. In the midst of my prayers and my struggle for restraining the passions, desire came, from this cause or from that; let Lopāmudrā approach her husband; the unsteady woman beguiles the firm and resolute man" (I. 179. 3-4). A concluding verse tells us that the venerable sage discharged both his obligations, his duties both of the domestic as well as of the ascetic life, and won true blessings from the gods. In later literature also women are sometimes spoken of as leading men astray from the path of ascetic purity, as for example, in Manu: "It is the nature of women to seduce men in this world; for that reason the wise are never unguarded in the company of women. For women are able to lead astray in this world not only a fool, but even a learned man, and to make him a slave of desire and hunger. One should not sit in a lonely place with one's mother, sister, or daughter; for the senses are powerful, and overpower even a learned man" (II. 213-215). But Varāhamihira enters a strong protest against such one-sided condemnation; he says, "Those who, from the ascetic point of view, enumerate the faults of women, to the exclusion of their virtues, are, it seems to me, bad men; their words do not proceed from good sense. Speak, in truth, what fault is there among women, which is not practised by men? Out of audacity the women are condemned by men; they are superior in virtues, says Manu" (*Bṛihat Saṁhitā* 74. 5-6).

A passage in the *Ṛig-Veda* has been quoted to show the hard-heartedness of women; but the context makes it clear that it is there for dramatic effect, and implies no scorn of women. It is put into the mouth of the divine nymph Urvaśī, who intent upon making the love-sick Purūravas desist from laying down his life for his love of her, says, "Die not, Purūravas, throw not yourself down, let not the hideous

wolves devour thee. There can be no friendship with women, their hearts are the hearts of wolves" (*Ṛ.V.* X. 95. 15).

The high regard for the wife in the Vedic age also appears from the fact that she is regarded as the half that completes the husband. The *Taittiriya Brāhmaṇa* (III. 3. 3. 5) observes, "The wife is verily the half of the self" and the *Śatapatha Brāhmaṇa* also gives the same position to the wife, although from another point of view, viz. that the husband reproduces himself through the wife who is therefore called *jāyā*: "The wife, in sooth, is one-half of his own self; hence, as long as he does not obtain her, so long he is not regenerated, for so long he is incomplete. 'Complete I want to go to that supreme goal,' thus he thinks" (*Śat. Br.* V. 2. 1. 10). The *Aitareya Brāhmaṇa* (VII. 13) already quoted puts it more clearly and scientifically. The *Gopatha Brāhmaṇa* (I. 1. 2) puts forward exactly the same view. The *Ṛig-Veda* (III. 53. 4) also clearly suggests the same idea: "A man's wife is his dwelling, and verily his place of birth." Manu (IX. 45) puts it very clearly: "The whole man (*purusha*) is made up of these (three)—his wife, himself and his progeny. The sages have declared, 'The husband is the same as the wife.'"

Here we find, in the early Vedic age, the discovery of a fact which modern biological investigations have proved to be a truth. Thus Prof. Julian S. Huxley observes in a recent publication of his (*The Streams of Life*, London, 1926): "One of the most obvious characteristics of living things is that they reproduce themselves. Not only this, but that every kind of living thing...reproduces itself in the same general way: part of the living substance of the parent or parents actually becomes the first beginning of the body of the offspring" (pp. 1-2). Again the same writer observes, "All methods of reproduction have this in common—that the offspring, when traced back to its first beginnings, is found to be simply a part of the parent, which becomes detached and then grows up, on its own account. It is, quite literally, a chip of the old block" (p. 3). Applying the theory to man, he asserts, "Children originate as actual pieces of living substance detached from the body of their parents" (p. 6).

No greater calamity could befall a Vedic householder than the untimely death of his wife, who stands beside him not only in his secular duties, but also at the altar. The household fire which he brought home with his wife in the nuptial chariot, and which was set up and maintained with sedulous care by the couple, now burns her

mortal remains, and becomes no better than 'funeral fire' (*śavāgni—Kāṭhaka Saṁhitā*). The widower must set up a new fire and seek a new partner at the daily offerings. Two courses are open to him—either he must forsake the world and become a forest-recluse (*vānaprastha*), or he must marry at once, immediately on the expiry of the period of impurity, if he prefers to continue in the householder's state, because the paramount duty of the householder, the daily offering of the *agnihotra*, cannot be carried on without the wife, and the discharge of this duty, which affects the whole of his future life here and hereafter, is certainly of far greater weight than any sentiment or emotion. Thus says Manu: "A twice-born man, versed in the sacred law, shall burn a wife of equal caste who conducts herself thus (*i.e.* controls her thought, speech and actions) and dies before him, with the sacred fires used for the *agnihotra*, and with the sacrificial implements. Having thus at the funeral given the sacred fires to his wife who dies before him, he should marry again, and again kindle the fires" (*Manu*. V. 167-168). Yājñavalkya also prescribes the same course: "The husband, after cremating his wife of virtuous conduct, should obtain without delay a wife, and also the fires" (I. 88). Without such marriage, he will be neither a *grihastha* nor a *vānaprastha*, and as such, he will be outside the *āśrama* scheme (*anāśramin*), and this is incompatible with the entire scheme of organization of Indo-Aryan society. "He who after having been in the householder's order, again becomes a *brahmachārin*, and not an ascetic (*yati*) or forest-recluse (*vānaprastha*), is excluded from all the *āśramas*. A twice-born man must not remain outside the *āśramas* even for a single day; he makes himself liable to severe penances if he stays without any *āśrama*," says Daksha (I. 10), one of the approved authorities on *dharma*.

The two great Indian epics, the *Rāmāyaṇa* and the *Mahābhārata*, present a brilliant galaxy of grand women—some of the noblest figures that would do honour to any country and any age. "Literature can show no grander types of womanhood than are to be found in the great epic poems of India, types sketched in by master hands from noble models, and uniting in a few heroic figures all that is at once strongest and sweetest, most lofty and most devoted in humanity," observes Mrs. Annie Besant.[1] "In the delineation of women," points out Monier Williams,[2] "the Hindu poet throws aside all exaggerated

[1] *The Dawn*, October, 1901, p. 82.
[2] *Indian Wisdom*, p. 378 ff.

colouring, and draws from nature. Kaikeyī, Kausalyā, Mandodarī and even the humpbacked Mantharā, are all drawn to the very life. Sītā, Draupadī and Damayantī engage our affections and our interest far more than Helen, or even Penelope. Indeed Hindu wives are generally perfect patterns of conjugal fidelity; nor can it be doubted that in these delightful portraits of the *pativratā* (devoted wife), we have true representations of the purity and simplicity of Hindu domestic manners in early times. The extent to which this devotion was carried, even in little matters, is curiously exemplified in the story of Gāndhārī, who, out of sympathy for her blind husband, never appeared in public without a veil over her face. When she first heard that her future husband was blind, she from that moment showed her respect for him by binding her own eyes with a handkerchief, and always remaining blindfolded in his presence." "It is clear," continues the same writer, "that in many instances there was considerable dignity and elevation about the female character, and that much mutual affection prevailed in families. Nothing can be more beautiful and touching than the pictures of domestic and social happiness in the *Rāmāyaṇa* and *Mahābhārata*. Children are dutiful to their parents, and submissive to their superiors: younger brothers are respectful to elder brothers; parents are fondly attached to their children, watchful over their interests, and ready to sacrifice themselves for their welfare; wives are loyal, devoted, and obedient to their husbands, yet show much independence of character, and do not hesitate to express their own opinions; husbands are tenderly affectionate towards their wives, and treat them with respect and courtesy; daughters, and women generally, are virtuous and modest, yet spirited, and when occasion requires, firm and courageous; love and harmony reign throughout the family circle. Indeed, in depicting scenes of domestic affection, and expressing those universal feelings and emotions which belong to human nature in all times and all places, Sanskrit epic poetry is unrivalled even by Greek epos."

There is a striking difference in the types of women portrayed in the two epics. In the *Rāmāyaṇa*, they are soft, gentle and delicate—Sītā, Kausalyā, and even Kaikeyī who makes use of her husband's love for her in gaining her ends. On the other hand, in the central story of the *Mahābhārata*, apart from the episodes, we have portraits of heroic ladies, strong and impetuous mothers of heroes. We miss in the laments of Sītā the impassioned utterances of Draupadī, in the wails of Kausalyā the boiling ire of Gāndhārī, a single glance of one of whose

covered eyes was enough to maim a limb of Yudhishṭhira for the rest of his life. Nor can we omit from this list the brave Sāvitrī who could wrench her husband from the icy grip of death, and who in her youth, it is said, although exquisitely beautiful in every limb, had such an aureole of dignity about her, that she looked a veritable goddess, and no young man would venture to seek her hand in marriage. Nor can we forget Vidulā, the heroic mother of Prince Sañjaya of the Sauvīras on the banks of the Indus; the son had suffered a crushing defeat at the hands of his neighbours, the Sindhus, and lay dejected and low, and would rather save his life than risk another battle with his fierce enemies. But the mother would not hear of it; the words of fire with which she sought to inspire her son and rouse him to action, are told in more than a hundred verses in the *Udyoga Parva* of the great epic (chs. 133-136), and with a recitation of them the mother of the Pāṇḍavas seeks to revive the drooping spirits of her sons. This section of the *Mahābhārata* has deservedly been designated *jaya* (victory), and is ordained to be recited to a king when he suffers at the hands of his enemies.

In the age depicted in the epics, the method of worship by sacrifices still continues—Draupadī still stands beside Yudhishṭhira at the Rājasūya and the Aśvamedha, but we hear less of the *agnihotra;* new deities are looming up behind the ancient Vedic ones, or the old deities are being approached in a new spirit; new myths are appearing, or the old ones present themselves in a new garb. Necessarily the social organization undergoes a slight change, but the supreme ideals are the same as ever.

Out of the numerous female characters in the Purāṇas, one stands out prominent, Madālasā, the queen of King Ṛitadhvaja. She inculcated to her four sons the superiority of spiritual life to worldly life and thus enabled them to win emancipation (*Mārkaṇḍeya Purāṇa*, chs. xxv ff).

It has been said that woman in ancient India was never regarded as man's equal, and that she was not to be independent at any stage of her life. The question requires to be examined with some care. Equality as understood in the West means an equality of rights, and in this sense it has no place in Indian thought, where life is valued as affording opportunities for spiritual uplift through duties to be discharged by one's own self, and not for claiming material comforts through rights to be asserted against others, as has been already pointed out. The scheme of life as sketched in the Indian sacred literature contemplates an equality in the ultimate results, viz. spiritual emancipation, for every individual, of whatever caste, order or sex. Equality of rights the Indian

sages never discuss, except as regards the common human right of winning salvation, and an equality of duties for all individuals irrespective of all inherent differences is an impossibility, in the family, the society, or the nation. We have seen that each member in society has his individual duties determined by his position in the *varṇa*-grade or the *āśrama*-scheme, and the duties of the two sex-divisions are equally, if not even more clearly, distinct; and as in the other cases, each sex has to render its own duties to achieve its advance. An equality of duties, or a mutual interchange of duties, between the sexes, is impossible; the absurdity of it is patent to everyone.

Each unit in the whole organic scheme of society has its own function, and a neglect of this function will bring down its own punishment. This applies to woman as it does to everyone else. That the husband is not doing his duty to her, is no excuse for the neglect of her own duty. Hence, even if the husband be bereft of virtues, a wife who cares for her own spiritual progress must not neglect her own duty towards him (*Manu.* V. 154). Her duty is to serve the husband, not to seek service from him.

The woman's duty is to bear children and to rear them up; for her these duties are natural, they are born with her (*sahaja*), that is, she is fitted by her very birth as a woman for them. Her responsibilities as mother she must not try to repudiate because of the inherent troubles—the sacrifice of comfort, the suffering from positive pain, because the path of duty is always beset with difficulties. " A duty determined by birth (*sahaja karma*) should not be forsaken, even though it has defects inherent in it, because all exertions, all undertakings, are encompassed by one or other defect, even as fire has a cover of smoke " (*Gītā* XVIII. 48). A woman who would repudiate the duty of motherhood would be condemned as an abnormal character in India. The woman shines most while carrying out her feminine duties; she lowers herself by working after purely masculine ideals. She would make herself ridiculous by claiming an identity of temperament and functions with man. In motherhood alone does marriage become holy, the mere indulgence of affection has no right to be.

Her duties as a mother are too exacting to permit a woman to pass through the course of rigorous discipline and austerities requisite for moral purification, for spiritual advance. Therefore the scriptures assure her that if she but carries out her own duties, and only associates herself with her husband in the religious exercises, in the worship through

sacrifices, and vows, practised by her husband, she fully shares in the moral discipline and in the resulting purification—in the advance achieved towards the goal. Manu declares: "Whatever be the qualities of the husband with whom a woman is united according to the law, such qualities even she assumes, like a river running down to the ocean" (*i.e.* as a river becomes salt after uniting with the ocean). Manu then gives the example of Akshamālā or Arundhatī, the wife of Vasishṭha, and others, and observes, "These and other women of low birth have attained eminence in this world by the respective good qualities of their husbands" (*Manu*. IX. 22-24). Therefore, in the joint performance of their duties, the wife is to follow the initiative of the husband, and these duties are determined by the husband's *varṇa* and *āśrama*. Hence Gautama (XVIII. 1) ordains, "A wife is not independent with respect to (the fulfilment of) the sacred duty" and he adds, "Let her not violate her duty towards her husband. She must not supersede her husband. She should be restrained in word, in eyes, and in deed" (*Gau. Dh. S.* XVIII. 2-3). We have seen that since the earliest times, as evidenced by the Ṛig-Vedic hymns, the Indian ideal of family life was that of 'a couple united in mind,' and also united in action, and as the ideal was one of spiritual advancement, this implied unity in worship, unity in religious observances. "In that family where the husband is pleased with his wife, and the wife with her husband, happiness will assuredly be lasting" (*Manu*. III. 60). The wife can have no religious observances apart from those of her husband: "There is no sacrificial performance, nor a vow, nor a fast for women, apart from their husbands; as she attends upon her husband, she will for that reason be exalted in heaven," says Manu (V. 155). The *Vishṇu Smṛiti* (XXV. 15) and the *Mahābhārata* (XIII. 46. 3) quote the same verse in almost the same words. There is positive prohibition of the vow of fasting for a woman whose husband is living (*Vishṇu*. XXV. 16). The respect due to the woman on account of her painful duty and heavy responsibility as mother, is pointed out in the *Dharmaśāstras* in very strong terms: "The women, destined to bear children as they are, are possessed of the highest excellence, are worthy of worship, and brighten up the household with their radiance; in the homes the wives are veritable goddesses of fortune, with no difference whatsoever. The begetting of offspring, the nurture of those born, and the carrying out of the daily duties are possible because of the wife, as we see before our eyes. Offspring, the due discharge of religious duties, faithful

service, highest conjugal happiness, and besides, heavenly bliss for the fathers and for one's own self, all these things are absolutely dependent on the wife" (*Manu*, IX. 26-28).

The dependence of woman upon man is also adverted to in the scriptures because of her inability to protect herself; she cannot defend herself against physical molestation, weak and frail as she is; the *Mahābhārata* (XIII. 37-43) observes that she is ordinarily wanting in moral strength too; and a passage in the *Ṛig-Veda* (VIII. 33. 17) observes that the mind of a woman is difficult to be controlled. Vasishṭha (V. 1-3) says, "A woman is not independent, she is dependent on man..." Here they quote also the following verse: "The father protects her in childhood, the husband protects her in youth, the son protects her in advanced years; a woman is never fit to depend upon herself." This verse is given in the same words by Baudhāyana (II. 3. 45), by Manu (IX. 2), and by the *Mahābhārata* (XIII. 46. 4).

In advanced years, the woman is placed under the charge of the son, and certainly in India this does not imply any inferiority; to the sons she is a veritable deity, as we have seen in the teacher's final address to the student in the *Taittirīya Upanishad*. To the Indian son the mother's word is law. The son is always even like a baby to his mother, as the *Mahābhārata* (XII. 265. 28) says, "A man, even though he may have sons and grandsons, is like a baby of two years when he comes to his mother even after a hundred years." In the reverence that is her due, the mother exceeds all others, even the teacher and the father, as Vasishṭha (XIII. 47) points out, quoting an ancient verse: "The teacher is ten times more venerable than a tutor (*upādhyāya*), the father a hundred times than the teacher, but the mother is a thousand times more than the father;" because, explain the Purāṇas, "She bears him in her womb and rears him up" (*Brahmavaivarta, Gaṇapatikhaṇḍa*, ch. 40). Yājñavalkya (I. 35) says that the mother is superior to the teacher, and even to the priest participating at the sacrifice (*ritvij*). Even a father who has violated a social injunction causing loss of caste is to be cast off; but a mother does not become an outcast to her son under any circumstances whatsoever (*Vas.* XIII. 47; *Bau.* II. 3. 42); "The mother exerts herself in numberless ways for the sake of her son; therefore he must render constant service unto her even though she be an outcast," says Āpastamba (*Dh. S.* I. 10. 28. 9). Even an expectant mother is respected by everyone: in Europe she apprehends ridicule, and tries to hide her condition even at the sacrifice of her health. In

India, her presence is auspicious, she pays no toll at a ferry, like the *brahmachārin* (student) or the ascetic (*Manu*. VIII. 407).

In a country where the mother is an object of worship, widow-marriage is unthinkable. "What is the price the Indian woman pays for a worship so precious? The price is the absolute inviolability of marriage. The worship is at bottom the worship of steadfastness and purity. If it were conceivable to the Hindu son that his mother could cease for one moment to be faithful to his father—whatever the provocation, the coldness, or even cruelty, to which she might be subjected—at that moment his idealism of her would become a living pain. A widow remarried is no better in Hindu eyes than a woman of no character....Once a wife, always a wife, even though the bond be shared with others, or remain always only a name. That other men should be only as shadows to her, that her feet should be ready at all times to go forth on any path, even that of death, as the companion of her husband, these things constitute the purity of the wife in India."[1] The closeness and sacredness of the marriage tie thus renders widow-marriage impossible in India. Efforts at widow-marriage made by reformers have met with but little response in this country. The girl's father gave her away to her husband, to whom she belongs for ever; hence when her husband dies, she cannot be remarried, as there is no one to give her away. The father cannot revoke the gift once made. Only once is a maiden given in marriage, and only once does a man say: "I give" (*Manu*. IX. 46). The husband dies, but really he is not dead; he is waiting on the other side where she is sure to go if "she does not insult his memory" (*Manu*. V. 151). "A faithful wife who desires to dwell after death with her husband, must never do anything that might displease him who took her hand, whether he be alive or dead. At her pleasure let her emaciate her body by living on pure flowers, roots and fruit; but she must never even mention the name of another man after her husband has died. Until death let her be patient of hardships, self-controlled and chaste, and strive to fulfil that most excellent duty which belongs to wives who know but one husband only" (*Manu*. V. 156-158). "In reward of such conduct, a woman who controls her thoughts, speech and actions, gains in this life high renown, and in the

[1] Sister Nivedita: *The Web of Indian Life*, p. 30.

next world a place near her husband" (*Manu.* V. 166). "The remarriage of widows is nowhere prescribed in the rules concerning marriage. This practice is condemned by the learned among the twice-born as fit for cattle" (*Manu.* IX. 65-66). It is sacrilege; it is adultery.

CONCLUSION

The Vedic Indians made a supreme effort to understand the fundamental meaning and the purpose of life; they discovered that life is a continued pilgrimage to the infinite and the eternal, and they applied the truths discovered in the course of their philosophical investigations to the organization of society, made philosophy the essential basis of everyday life and activity. Success in reaching the ultimate goal—in attaining spiritual emancipation lies, according to the Indian scheme of society, in each unit in the whole social organism attending to its own function—carrying out its own duty (*svadharma*), as determined by the diverse environments in which it is born, by the varying stages of life through which it passes, as also by the natural differentiation of sex. The very fact that this society, with spiritual freedom as its goal, has endured so long notwithstanding the terrible onsets of cultures basically different from its own, is a proof in itself that there is truth in the principles underlying its structure, that it is broad-based upon the fundamental truths of human life. Nevertheless it cannot be denied that this social organization is decadent, and its decay is due not so much to external opposition or to any inherent weakness in the ideal, but to a falling off from the ideal itself. The decay set in when the spirit of the law through which the ideal found expression came to be lost sight of, and the letter of the law acquired an importance quite disproportionate. The rules and ordinances, sanctions and prohibitions, governing popular life and activity and codified by the social legislators came to be obeyed, without enquiry about the spirit, and sometimes in violation of the spirit. The reality of the spiritual life underlying the socio-religious institutions was forgotten, the essence of religion was sacrificed to form and convention, to dead ritual and lifeless worship. The inlying spirit has to be rediscovered, and the law framed anew, where needed, and obeyed with a consciousness of the spirit within.

There is need, however, to guard against false spirituality—against inactivity and sloth, passivity and feebleness, which not infrequently masquerade as spirituality. Genuine spiritual life must be intensely, and withal selflessly, active; it will manifest itself in purity, in clear

vision, in cheerful and resolute devotion to a definite high purpose, in a predominance of the *sattva* constituent of our self; it can never consist in a base retirement from active life, in passivity, dulness and stolidity, that is, in the predominance of the *tamas* constituent, which hangs like a curtain over the understanding and darkens the perception of truth, producing illusion and error. This sham spirituality dreads trouble and hankers after security; it is marked by ignoble ease and ignoble fear.

Added to this internal decay, there is an inrush of external forces that have thrown us quite out off our feet. The aggressive civilization of the West, with a conception of life which is mainly materialistic—with an outlook mainly industrial, and thus fundamentally different from ours, has caught us in its iron grip. Many of us have been blinded by the dazzling glare of its industrialism. They are beginning to think that our salvation lies through an importation of Western institutions, and are duped by the illusion of a so-called progress, which is quite often in truth nothing but a positive retrogression. They would unthinkingly even introduce in our midst institutions that the best thought in the West has found effete and jejune, defective and even harmful. But nothing short of a catastrophe like this could rouse us from the stupor and somnolence into which we had sunk. It has given us an awakening for which we cannot but be thankful. Contact with Western life for over a century has now made it amply clear that the modern European or American life has its brighter and darker aspects, equally with the present day Hindu life. At this juncture we require a searching analysis of both the civilizations, a critical appreciation of all that is great and good in both the cultures, and an intelligent grasp of all that is weak and defective in either. A comparative study of the two cultures by the Indians and for the Indians has become a vital necessity. Let us hope that this very struggle with an alien civilization will impart new life and vigour to us; let us acquire strength from the conflict itself. There can be no organic growth, it is said, without a stimulus; then let this stimulus from without advance our growth, not retard it.

Our case is not so hopeless as might at first sight be supposed. The impact of Indian culture with Islam brought forth Rāmānanda and Kabīr, Nānak and Chaitanya. India accepted their interpretation of the purpose and meaning of life, adopted the course of discipline and conduct sketched out by them, and the great mass of the Indian population, from one end of the country to the other, still follow their lead. And the race of these supermen is not extinct yet. That great souls like

Sri Ramakrishna, out of their abounding love for suffering humanity, deign to come down and dwell amongst us, inspiring us with their lives, and directing us with their precepts, shows that there is still hope for us. They shape their course not from injunctions and ordinances, but from an intuitive perception of right and wrong, from a direct vision of truth; it is they who can break the shell of form and convention that hides the great truths embedded in our sacred literature, and interpret them for us anew in words that we can understand and apply to our life; it is they who can give us the true lead. Even thus is vindicated the promise conveyed in the *Bhagavad-Gītā* that the Supreme Spirit incarnates Itself for reviving the *dharma* whenever it fades and withers, and whenever the forces of darkness and evil raise their heads to stifle it.[1]

[1] The subject will be dealt with in all its aspects in a book under preparation by the writer.

THE POSITION OF WOMEN IN ANCIENT INDIA

Gods live in joy where women are revered—so says Manu, meaning thereby that reverence for women is one of the essential qualities that go to make a society really civilized. It also follows that this condition largely obtained in the old Indo-Aryan society. Indeed, Georges Clemenceau takes the prevalence of this condition as a measure of the supreme height to which the ancient Indian culture rose. He is surprised to find that not only the Vedic pantheon cannot be without goddesses but the being of woman is there in the very conception of the sacrificial fire which is the first and foremost divinity of Vedic devotion. And he proceeds to observe that the Asian contribution of Virgin Mary proved a saving gift to Christianity.

As a matter of fact, the personality as well as the beauty of woman makes a strong appeal to the Vedic mind. We have to take note that the word *nārī* in the Vedas conveys a sense of dignity, meaning *netri*, *i.e.* directress. Coming from the tribute to her character to the love of her form, we find that the very plan of the Vedic altar has been made after the model of a woman: "The *vedi* should be broader on the west side, contracted in the middle and broad again in the east; for of this shape they praise a woman...Thereby he makes the altar pleasing to the gods."[1] Indeed, with the ancient sages the idea of woman never fails to give an inspiration of some kind. She calls forth thrills of romantic admiration for her graces and glories. And a rapturous joy in her love she arouses. Her beauties so fully occupy the poetic temperament of the *ṛishis* that the sparkling *soma* suggests to them no other simile than that of a bright woman. When a god is summoned for speedy arrival to the sacrifice, look at the simile used:

"Come, Indra, come in eager haste,
Our hymns to hear, our food to taste,
Like lover lured by female charms,
Who rushes to his mistress's arms."

In offering praise to Agni, the affectionate household deity, the sages must think of him as "lover of maidens, the husband of women."

Every aspect of female beauty is lovingly dwelt on. A current of delight passes at the thought of the woman returning home with the

[1] *Sat. Br.* I. 2. 5. 16.

waterpot. The goddess of dawn, Ushas, is hailed as "the mistress of the world" and "the most perpetual of all females." Through her the Vedic woman receives homage to her attractions:

"Thou sweetly smilest, goddess fair,
Disclosing all thy youthful grace,
Thy bosom bright, thy radiant face:
And lustre of thy golden hair."

Reactionaries are everywhere. Indra, the Vedic hero of free love, is reported to have considered woman's mind as ungovernable.[1] Against the *netri* ideal has been set up the interpretation of *nari* as '*nirṛiti*,' *i.e.* evil personified.[2] There is a reference to woman's power of extracting presents from her husband by cajolery.[3] The Smṛiti quotes the testimony of the Śruti to prove her evil nature. Even a not strictly theological text, the *Gītā* (ix.32), says, "For, O son of Pṛithā, even those who are of sinful birth, women, Vaiśyas, Śūdras likewise, resorting to Me, attain the supreme goal." There is a ritual for the bondage of woman, and the text of the Brāhmaṇa[4] concludes: "The wives have no right whatever either to their own bodies or to a heritage."

But these are only occasional jarring notes which did not acquire volume enough to subdue the total effect of harmony. For the same Brāhmaṇa recovers its good humour in the course of relating the Vājapeya sacrifice, and says: "'Wife, let us ascend to heaven,' and the wife answers, 'yes, let us ascend'......When he has a wife......he is complete. As a complete individual will I go this way to heaven."[5] No less a sage than Yājñavalkya[6] compares a man without a wife to a legume without one of its two valves and goes on to say that the void in man is surely filled up by his wife. The *Sūrya-Sūkta* or the wedding hymn considers wife as a blessing indeed.

She could be a blessing because marriage in those remote days was far from being a fulfilment of a soulless social obligation. There was freedom from formalism and from ignorance, and youth, education and self-determination used to lend life to marriage. The wedding hymn speaks of girls meant for marriage as having attained youth and a desire for husbands. A *kanyā* in Vedic language denotes an unmarried youthful girl. She is found to attire herself in gay garments and attempt at

[1] *R.V.* VIII. 33. 17. Sāyaṇa comments that it is due to her being of a vehement nature.
[2] *Maitrāyaṇī Saṁ.* I. 10. 11, *Śata. Br.* I. 3. 1. 9; *Tait. Saṁ.* VI. 5. 8. 2.
[3] *Kāṭhaka Saṁ.* XXXI. 1. [4] *Śat. Br.* IV. 4. 2. 13. [5] *Ibid.* V. 2. 1. 10.
[6] *Bṛih. Up.* I. 4.

gaining the admiration of a chivalrous youngman whom she may marry. There is hardly any restriction on her movements.[1] She goes about freely to parties and places of sacrificial functions. Her mother often helps her with useful introductions and instructions in finding a husband.

A Vedic verse tells us that there are many girls who become pleased with wealth while there are some of a more refined nature who find pleasure in devoting their thoughts to securing husbands of their own liking. On this Muir comments: "May we not infer from this passage that freedom of choice in the selection of their husbands was allowed, sometimes at least, to women in those times?" Most assuredly.[2] Endowed with a thoroughly well-balanced culture, the woman of the Vedic days naturally claims a voice in her own marriage. She does it without any question, because she has education. It is distinctly enjoined that she should go through a full course of *brahmacharya*,[3] which means studies to acquire knowledge of the Vedas. By means of her Vedic studies she acquires such accomplishments as may enable her to win a young husband.

Later lawgivers like Manu have also maintained that she should attend to *brahmacharya* and the marriage arising out of this condition, known as *brāhma*, has been most recommended. This form of marriage requires parental sanction, which is sympathetic instead of proving an imposition, as the girl has a certain mental development. The story of Soma is interesting. It runs thus: "Sitā-Sāvitri came to her father Prajāpati and saluting him asked for permission to approach him with her complaint. She loved Soma, she said, while he loved Śraddhā. Prajāpati made for her a paste of a sweet-smelling substance, to which he imparted potency by the recitation of certain formulas, and painted it upon her forehead. She then returned to Soma who invited her to approach him. She desired him to promise her his society and to tell her what he had in his hand, whereupon he gave her the three Vedas,"[4] etc.

The spirit of self-choice does not abate too soon. The names of Damayanti and Sāvitri are the most popular. Both these heroines of inspiring love and purity marry the husbands they desire. Not less

[1] *Ṛ.V.* IV. 58. 8.

[2] Macdonell and Keith observe in the *Vedic Index*: "Child wives first occur regularly in the *Sūtra* period, though it is still uncertain to what extent the rule of marriage before puberty then obtained."

[3] *A.V.* III. 4. 18. 1; XIX. 2. 19. 8.—*Sāyaṇabhāshya*.

[4] *Tait. Br.* II. 3. 10. 1.

impressive is the character of Draupadī. She says she will not marry Karṇa when he is seen approaching the target. Jaratkāru tells her brother Vāsuki that a woman marries either for love or for duty. The daughter of Garga keeps looking for a husband after her own mind till late in life. This right to choose a husband[1] goes down to the time of the Smṛitis, the period of early twilight of Brāhmaṇic civilization. Darker days come rapidly rolling on. And woman bends under indignity set off only by pity, and gradually she is reduced to a state of dreamy dullness.

What in earlier days gave her title to respect for her feelings was that through education her mind acquired a character that could not be trifled with. And the course of *svādhyāya* or study naturally gave her time to grow up to an age of self-consciousness as well as of youthfulness. In the celebrated prayer-book of wedding, the groom asks the bride "forthwith to go to his house and there rule over all." This can have meaning only with reference to a young woman. Ghoṣā[2] says that she has blossomed into a woman and now the bridegroom has come to woo her.

Every heroine of classical Sanskrit is cast in a youthful mould which alone can be the vehicle of romantic emotion. Her development, however, does not take away her delicacy, her rosy bashfulness. The Ṛig-Vedic literature[3] has preserved a pencil-sketch of elegant modesty in a short simile of one line: just as the bride at the sight of her father-in-law withdraws in shyness with a rhythmic modulation of the body. A lovely character blends with her physical charms, and the whole picture becomes invested with a wonderful richness of colour. For a superb composition of youth and elegance, Pārvatī is surely a model of classical beauty. She appears a charming thing, walking sportively with her father and intently hearing him talk with the divine sages. Suddenly the scene becomes dramatic and the picture colourful when they start proposing her marriage with the great god. Her fingers get away from the hold of her father's hand, she hangs her head down, softly sends her glances athwart and takes to counting absorbedly the petals of the lotus held in her lovely hand.

A couple of verses in the *Atharva-Veda*[4] presents a grown up girl who has been left too long waiting for a husband after her mind. God

[1] Sāyaṇa refers to *svayamvara*, *Ṛ.V.* I. 116. 1. So does Manu IX. 91. It is rarely mentioned in the *Sūtras* and Smṛitis while the epics and classics are full of it.
[2] *Ṛ.V.* X. 40. 6. [3] *Ait. Br.* III. 12. 11. [4] *A.V.* VI. 60. 2, 3.

Aryaman is requested to grant that she may now have her own turn and let other women gather round her wedding party; for she is tired of attending marriage ceremonies of others.

The numerous spells and charms recommended by the *Atharva-Veda* to compel the love of man and woman also point to the same tradition of union amongst fully developed persons. The language used in them leaves no room for mistaking the age of the persons concerned. Macdonell and Keith observe: "The marriage ritual also quite clearly presumes that the marriage is a real and not a nominal one; an essential feature is the taking of the bride to her husband's home," etc.

During the age of the Smritis, authorities are available for the marriage of girls in both youth and childhood. The echoes of the Vedic injunction, however, have not yet completely died away. The Vedic practice is traceable in the use of the word *api* in the clause *aprāplāmapi* (although under age), where Manu (IX. 88) recommends rather giving away a girl in marriage even if she has not reached proper age, in the circumstances of a good husband being found earlier. But on the whole, the Smṛitis stand out predominantly in favour of early marriage. And this inspiration, it appears, was mainly derived from a strong demand for increasing the man-power of the Brāhmaṇas. The Śruti[1] provides for taking back an unfaithful wife into the husband's home and hearth. This is echoed in the Smṛiti[2]: "A wife (though) tainted by sin, whether she be quarrelsome, or has left the house, or has suffered criminal force, or has fallen into the hands of thieves, must not be abandoned," etc.

It may be noted that in the *Rāmāyaṇa* we meet probably for the first time with the unmanly treatment of a wife as in the denial of the husband's home to Sitā.[3] The punishment of Ahalyā in the same book goes against the dictate of *Vasishṭha Smṛiti* and also digresses from the original story,[4] where her amours with Indra are referred to without worrying about inventing a tragic fate.

The unrelenting imposition of a soulless chastity and the unintellectual execution of its distorted ideals were in reality a blunt caricature of the virtues that in the creative age of the past were held in their proper

[1] *A.V.* I. 3. 3. verses 2-4. *A.V.* VI. 77 prescribes charms and spells to cause the return of a truant woman.

[2] *Vasishṭha* XXVIII. 1-3; III. 58; XXI. 8.

[3] This episode occurs in its *Uttara-kāṇḍa* which is not merely the last book but a work compiled by doctrinaires of a later period, while, on the whole, its first six books are more or less compact.

[4] *Sat. Br.* III. 3. 4. 18; *Tait. Ār.* I. 12.

perspective and maintained in their fine proportion. The old Sāvitrī legend told by the sage Mārkaṇḍeya is extremely edifying and inspiring. Curiously enough, a Purāṇa composed in the third century A.D., and attributed to the very same Mārkaṇḍeya, relates the fond devotion of Anasūyā who carries her husband on her back to his courtesan's house! Manu (V. 154) appears to deny all individual values to a woman when he asserts: "Even if a husband is lacking in all virtues, only indulges in sense pleasures and possesses no good qualities of any kind, he must ever be honoured as a god by a virtuous wife." Admiration for extravagant chastity is reverberated in later Smṛitis. This was not only possible but altogether inevitable, simply because the child wife with her undeveloped mind was given to nurse foolish notions about herself and was afraid of demanding any consideration for her personality. Wild ideals of Paurāṇika chastity had little chance of acceptance in Vedic times, when women had a refined thinking faculty that would not put up with any crude sermon tampering with her sense of self-respect, that would not yield to love by ordinance.

Womankind had no mean share in illuminating the Vedic age with the light of wisdom. It was the possession of culture that helped her to assert herself and to do so with grace. She burst into creative vigour and could not be crippled with routine duties. She discovered herself and could express herself too. Her intellectual achievements spoke through the Vedic literature. There are a number of women sages who produced beautiful Vedic verses One of them, Vāch, daughter of the sage Ambhṛiṇa, composed a cluster of hymns revealing her vast conception—the famous *Devīsūkta*. Women served also as priests in sacrifices.[1] Participation in sacrificial functions was a matter of course. We come across an excellent simile: Like women sometimes keeping at home, the wind-gods live behind the veil of clouds; and sometimes they come out and make themselves felt, like women looking so fine while freely taking part in sacrificial festivities and chanting hymns.[2] One must bear in mind that similes are coined after well-known facts. The same has been told without rhetoric too: From the earliest times women have been frequenting public sacrifices and are verily the mainstay of all religious rites.[3]

[1] *Ṛ.V.* VIII. 34. 19 and Sāyaṇa's commentary on it.
[2] *Ibid.* I. 157. 3 (Wilson's interpretation).
[3] *Ibid.* X. 86. 10.

Viśvavārā is found saying her prayers alone. Usually, however, the husband and wife perform sacrifices together. This tradition is carried on in the Āraṇyakas and *Śrauta-sūtras*. The wife is asked to say the *mantras*, to be present at the place of sacrifice and to join the chorus in singing the *sāmans*.[1] She has been recommended as the inseparable partner in doing every ritual duty. She is required to read out Vedic texts according to the instructions of her husband. She has a long rôle to play in connection with the ritual acts prescribed by the *Krishṇa-Yajus*. In unmistakable terms she has been offered equal rights[2] with her husband in sacrificial performances. Vedic evidence has been adduced to say that the wife is initiated into the studies of the Vedic lore and at that time she ties round her waist a rope of sacred grass.[3] This is known as *vratopanayana*, and it ran down to much later ages. It has been observed: "There are two classes of women—those given to Vedic learning and those given to domestic duties. For the former are prescribed the sacred cord, the five sacrifices, Vedic studies and living on alms received in the family. For the latter, the sacred cord is somehow to be given before marriage."[4] A section of the Brāhmaṇa is cited by a Smṛiti[5] in regard to the Vedic persuasions of maidens who wore the sacred thread and chanted the Sāvitrī hymn. *Upanayana* for girls gradually fell into disuse and Manu considered that the marriage ceremony should serve this purpose as well. The Tāntrika age restores to her some lost rights such as access to the scriptural texts; but it altogether confuses the meaning of her vitalizing personality.

Attempts at squeezing this personality begins with the *Gṛihya Sūtras*. She is rudely warned not to meddle with the Vedic *mantras*. Notices are available, however, of her receiving education. She is offered some part in the household fire-worship, but is ruled out of major rituals performed publicly. On the other hand, the strictly Vedic school sought to uphold the dignity of woman. With force of argument supported by Vedic documents and a solemnity of feeling guided by broad common sense, Jaimini[6] stands up for her fullest association with Vedic

[1] *Tait. Ār.* IV. 7. 5; IV. 11. 2; IV. 11. 4 (the *Kalpa* attached to it observes that the wife joins her husband in the performance of all and sundry rites).

[2] *Kātyāyana Śrauta* I. 7: *strī chāviśeshāt*.

[3] *Tait. Br.* III. 3. 2. 7; *Sat. Br.* I. 3. 1. 2.

[4] *Hārīta Saṁhitā* quoted in Mādhava's commentary on the *Parāśara Smṛiti*, Bombay Sanskrit Series, Part I. Ch. II. p. 82.

[5] *Yama Saṁ.*

[6] *Pūrva Mīmāṁsā* VI. 1. 6-8, 13, 15-17, 23.

observances. And Pāṇini takes care to define *patnī* as the wife who keeps company with the husband in the performance of rituals. In fact, it is not the original authors with the emancipated mind of creative thinkers, but the mechanically minded commentators[1] who worked for the suppression of the rights of women, whom they bluntly assumed to be in league with ignorance and illusion.

But the sages of the Upanishads had no such poor conception of womanhood. In fact there was provision for the education of girls and they were admitted into institutions of learning where the system of co-education prevailed. A clear reference to it is found in the *Aitareya Upanishad*.[2] While going to give a lesson on Eugenics, it directs, presumably for the sake of decency, that expectant mothers should now go away and return when this lecture is concluded. In some branches of study, there were specialists too.[3] Among the exceptional women of the Upanishadic times the name of Maitreyī stands out in bold relief. The lustre of her spiritual mind illumines the world even to-day. For sheer intellectual acumen, two women stand out in singular brilliance. An all-India religious conference takes place in the pre-historic age, and another in the post-Buddhistic age. They have been summoned not for mere academic debate, but for the establishment of principles that should govern the spiritual life of the nation. The former is championed by the sage Yājñavalkya, and the latter by the great Śaṅkarāchārya. In the first conference, convened by King Janaka, when the sages assembled from all quarters of India, are silenced, Gārgī, the daughter of Vachaknu, boldly rises on behalf of the humiliated. She is defeated, but only after putting up a tough fight. In the second conference, Śaṅkara, in the course of his religious conquest, confronts the redoubtable champion of rituals, Maṇḍana Miśra. And the task of presiding over this momentous meeting falls upon Ubhayabhāratī, Maṇḍana's wife. The history of the world does not yield another instance of a woman being chosen as the judge of a meeting of so much importance of the day and making such an exceptional demand on her intellectual ability as well as integrity. And she gives the verdict in favour of Śaṅkara, with the result that her

[1] Karka on *Kātyāyana Śrauta* I. 7-8; Śavarasvāmī, Pārthasārathi Miśra and Mādhavāchārya on *Pūrva Mīmāṁsā* VI. 1. 24. Sāyaṇa, however, appropriating the spirit of the Vedas, was considerably free from unimaginativeness. See *R.V.* I. 131. 3.

[2] *Ait. Up.* II. 5. *Bṛih. Up.* VI. 4. 17, refers to desire for a learned daughter.

[3] *Kaush. Br.* II. 9; *Ait. Br.* V. 9. Women teachers and specialists are also referred to in the *Mahābhashya* of Patañjali IV. 1. 140 and *Vārtika* on the aphorism *iguścha*, in the chapter on *kṛidanta*. They are largely found in the Buddhist age too.

husband becomes a monk and a disciple of his opponent, whose view henceforth becomes acknowledged as the paramount creed of the country.

No education is complete that does not attend to the development of the pupil's aesthetic sense. Down to the days of the classics, our women were perfectly free to indulge in singing and dancing. The Vedas allude to dancing and singing by women. The professional development of this fine art reaches its culmination in the royal courts of the Buddhistic regime. The attainment of personal beauty and the skill in make-up are realized to be matters of importance.

An instinct for beauty in the creation of a personal background gives rise to a picturesque fashion in attire and ornament. It is said of the goddess Ushas that "she throws gay garments round her like a dancing girl." That peculiar combination of richness and subtlety that goes by the name of the oriental style was indeed a natural product. The Vedic woman has "very nice clothes" no doubt, but she has no elaborate robes. On the other hand, she has abundant ornaments. Her lovely sense of beauty comes to her aid. With the nature of an artist, she makes a quaint display and creates a pictorial effect. She knows all the winning styles of wearing her articles. A finished picture of an all-round aesthetic culture, well worth the envy of the most up-to-date society girl, is seen behind the portrayal of Ushas who is likened to an excellent actress enchanting all observers by her song, dance and display.

But the woman in ancient India is not merely all elegance. She engages in all prevalent sports and pastimes that please her husband. Often she is also heroic. The Rajput heroines have their prototypes in notable women of more ancient days. Queen Biśpalā[1] goes out to fight and loses a leg. Draupadi's name has already been mentioned. It is in the mediaeval age that woman's freedom of movement begins to be curbed. She cannot now be sent alone and unchaperoned to places of ceremony and residences of other people. A jealous watch is kept on her and she is forbidden to hold conversation with a man outside her family.

A similar restriction is put on her rights to property. In the Vedic period, the social position of the woman was generally high.[2] The unmarried daughter was offered a share in her father's property and

[1] *Ṛ.V.* I. 116. 15.

[2] *Kauṭilya* II. 1. 19 prescribes fine for one who becomes an ascetic without making provision for his wife and children.

though the married daughter was given no interest therein, she got ample dowry at the time of her marriage. Again, a father without a son appointed his daughter as *putrikā* and such a daughter was equal to a son. There was an early recognition of the independent right of a wife. The ebb-tide, however, set in during the *Sūtra* period. Baudhāyana says, "Women are considered to be destitute of strength and of a portion." Āpastamba excludes the wife's rights altogether which later on is slightly amended by Manu. He, however, accepts the right of a daughter who is not a *putrikā*, a point on which Yājñavalkya is even more liberal and pronounced. The Smṛitis argue that since women have no right to perform Vedic sacrifices, they are not to own any wealth.

Gautama, however, sanctions a share in the heritage in favour of the widow of a childless man if she seeks to raise up offspring to him. But the greatest champion of woman's legal right is Vijñāneśvara who finds no longer any use for the disconcerting proviso of *niyoga*. The moral obligation of the Śruti period to respect the personality of woman develops into a fully legal protection in his *Mitākshara* and Jīmūtavāhana's *Dāyabhāga*,[1] which strengthen the legal position of the wife in regard to inheritance, and confer on her an extensive proprietory capacity. Sir Henry Maine, in his *Early History of Institutions*, is delighted to admit that even the English Law of 1886 fails to rise up to the level of Vijñāneśvara and Jīmūtavāhana whose dicta on *stridhana* are wonderful in their recognition of woman's legal rights, her social values, her personal qualities.

The personality of woman has been receiving recognition throughout the remote past of the Hindu history. In every aspect of her being, in every stage of her life, she is always the embodiment of abiding good, always an object rousing veneration. The Śruti[2] sanctifies wedding and lifts it up to the level of supreme good and truth: "That which is the receptacle of truth, that which is the ground of good deeds, there in company with your husband do I place thee, bride." She is the soul of the household and the power she wields is to the well-being and rejoicing of all concerned. She is considered to be the "household goddess" and the husband is enjoined to honour and humour her with liberal gifts of ornaments. And the wife, on her part, has a spontaneous self-effacement. Says Sitā, the devoted, tender, yet resolute Sitā, to her lord Rāma:

[1] Commentaries on *Manu*, belonging to 11th and 12th centuries respectively.
[2] *Ṛ.V.* X. 85. 24.

"The wife can find no refuge, none,
In father, mother, self or son.
If, Raghu's son, thy steps are led
Where Daṇḍaka's pathless wilds are spread,
My feet before thine own shall pass
Through tangled thorn and matted grass."[1]

And the husband too is mortally repentant if his misdeed brings down misery on his wife. This ready reciprocity and perfect unison is one of the noblest traditions of Hindu culture. The husband welcomes his wife with warmth and tenderness and feels absolutely "of one mind" with her. The wife too, aching with emotion, begs of her husband: "Mayst thou be wholly mine." They both pray: "The eyes of us two (be) of honey aspect, our face (be) ointment; put thou me within thy heart; may our minds verily be together."[2] How the Hindu ideal of love transcends considerations of the body is beautifully delineated by Kālidāsa in his *Kumārasambhava* (canto V), to which the reader is referred.

[1] *Rāmāyaṇa* II. 27: Griffith's translation.
[2] *A.V.* VII. 36.

HINDU EDUCATIONAL SYSTEMS

I. AS DEPICTED IN THE UPANISHADS

The earliest references to the educational systems of the Indians are to be found in the Upanishads and Brāhmaṇas. During that period a process of educational development was at work, out of which, broadly speaking, there emerged three different types of institutions in and through which the culture of the country preserved and propagated itself.

Firstly, there was the normal system under which the teacher, as a settled householder, admitted to his instruction pupils of a tender age, who left their parental homes on the first dawn of consciousness for those of their spiritual parents. The need of instruction under a teacher is emphasized by the Upanishads (*Kaṭha* II. 8; *Muṇḍ*. I. 2. 12; *Chhānd*. VI. 14. 1-2). In the older Upanishads we repeatedly come across the prohibition to communicate a doctrine or ceremony to any one except a son or a pupil adopted by the rite of *upanayana*, first mentioned in the *Atharva-Veda* XI. 5; (*Aitareya Ār*. III. 2. 6. 9; *Chhānd*. III. 11. 5; *Śvet*. VI. 22; *Bṛih*. VI. 3. 12). We also find in the Upanishads men and gods taking fuel in their hands and submitting to the conditions of pupilage (*Chhānd*. V. 3). At the same time the evidence seems to indicate that a formal pupilage was not absolutely binding in the earlier period. It was also possible in those days for a man to receive education from his father or at the hands of other teachers.

The details of the ceremony of *upanayana* or initiation indicate the essentially spiritual character of the process. The request to be received by the preceptor had to be formally made by the pupil (*Bṛih*. VI. 2. 7). The carrying of fuel by the student was a token that he was willing to serve the teacher and especially to maintain the sacred fires. Before receiving him the teacher made inquiries regarding his birth and family. This entry into the preceptor's home was a sort of rebirth, whence the *brahmachārin* became a *dvija* and an *antevāsin*. The details were later elaborated into a system by the Smṛitis. A typical instance of the institution was Satyakāma Jābāla's going to his preceptor's house as a young boy (*Chhānd*. IV. 4. 4). The period of studentship was normally fixed at twelve years, though there seem to have been longer terms.

The student had to live in the house of his teacher and perform several duties as a means of his moral and spiritual discipline. It was the usual rule with him to go about begging for his teacher. He had to tend the sacrificial fires, the house work of his teacher and his cattle. He was forbidden to sleep during the day-time. On festive occasions, the teacher was accompanied by his pupils, who awaited his commands. During the time left after the performance of these duties, the pupil prosecuted his studies. Regulations were laid down governing Vedic studies, particularly the recitation and the teaching of the Vedas.

These external practices and regulations were enjoined in order to develop in the young pupils those mental and moral attributes which would fit him for receiving the knowledge of Brahman, which forms the special subject matter of the Upanishads. Various pre-requisites of Upanishadic instruction, or preparatory means to a knowledge of Brahman are laid down in the Upanishads themselves as well as in some earlier works. Thus the *Gopatha Brāhmaṇa* (II. 1. 2. 1-9) requires the *brahmachārin* to overcome caste-pride, fame, sleep, anger, bragging and foppishness. Before he is taught the highest knowledge, he is required to be calm and unperturbed in mind, self-restrained, self-denying, patient and collected. To these are sometimes added purity of food and the resulting purity of mind, and the fulfilment of the vow of the head (*śirovrata*), which indicates either the rite of carrying fire on the head or, as Deussen suggests, the shaving of the head.

More often the realization of the knowledge of Brahman required the dedication of a whole life and not a mere part of it. The above epithets were hardly applicable to a stripling who had no experience of the struggle and temptations of life. Similarly, we find in several Upanishads the scope and conception of *brahmacharya* widened so as to embrace not merely the student life proper, but the entire course of life, regulated by the disciplines of its four successive *āśramas* or stages that lead to the Ātman. The knowledge aimed at in the Upanishads, thus, implies the application of the whole life, through all its stages. Nearly all the Upanishads emphasize the need of abstinence and asceticism in all stages of life, to which the term *brahmacharya* or *tapas* is generally applied in an extended connotation. It is also evident from a few concrete examples that the teaching of the Upanishads was not always confined to the first period of life. From a passage in the *Taittirīya Upanishad* (I. 11) embodying the parting advice of a teacher to his student, it would appear that the period of studentship was

regarded as preparatory to the realization of the knowledge of the Absolute. These words addressed to the student at the end of his career, which read almost like the Chancellor's convocation address to the graduates of a modern university, contain several interesting points. Entering upon the householder's life and fatherhood, the duty of studying and teaching the Vedas, various duties of social and domestic life and taking proper care of his health and possessions are there enjoined upon him.

The relations between the teacher and the taught were of the happiest kind. The pupil looked up to his preceptor as his father. Sometimes the *antevāsins* living in the house of the teacher preferred and were permitted to continue that life throughout, because it was so agreeable.

The teacher was required to fulfil certain moral and spiritual conditions. He was to be well versed in sacred lore and dwelling entirely in Brahman (*Brahmanishṭha*). It was his duty, when a fit pupil approached him, to teach him the truth exactly as he knew it, without concealing anything from him. The teacher might take several pupils.

Regarding the extent to which education was thrown open to the different classes of people, we have the late evidence of the *Gṛihya Sūtras* that the three twice-born castes were all required to undergo a period of studentship. It was practically a system of universal compulsory education for the Indo-Aryans. This probably explains the remarkable boast of King Aśvapati Kaikeya in the *Chhāndogya Upanishad* (V. 11. 5): "In my kingdom there is...no ignorant person." The course of training and subjects were not of course uniform for all the castes. We frequently find in the Upanishads and Brāhmaṇas evidence regarding learned Kshatriyas and princes who studied the Vedas and attained proficiency in the sacred lore which was the special property of the Brāhmaṇas. King Janaka of Videha was typical of a class of learned Kshatriyas of the period, who even imparted sacred knowledge to the Brāhmaṇas (*Kaush.* IV. 1). Similarly, Pravāhaṇa Jaivali, King of the Pañchālas, silenced Śvetaketu Āruṇeya and treating him and his father as disciples communicated to them knowledge which "had never dwelt in any Brāhmaṇa" (*Bṛih.* VI. 1. 1; *Chhānd.* V. 3. 1). There is a difference of opinion regarding the exact conclusion to which such evidence should lead. To us it appears that while the Kshatriyas as a class attended first of all to war and administration, occasionally a few kings would interest themselves in the sacred lore

and the highest knowledge. The people who are represented to us as studying and disputing are normally Brāhmaṇas, the bearers *par excellence* of Hindu culture.

Education was not denied to women. In the *Brihadāraṇyaka Upanishad* (III. 6. 1; III. 8. 1-12) Gārgī takes no unimportant part in the disputation on philosophical topics. The Upanishads mention several other women as teachers. In this connection it may be noted that the women were taught some of the fine arts, like dancing and singing, which were regarded as accomplishments unfit for men.

As regards the subjects of study as they were known and developed during the period, we have many references scattered throughout the Upanishads and Brāhmaṇas. The technical name for study proper, *i.e.* the Vedic study, was *svādhyāya*, the object of which was the threefold knowledge (*trayī-vidyā*), that of the *Ṛich*, *Yajus* and *Sāman*. Besides the Vedas we have mention of *anuśāsana*,[1] which, according to Sāyaṇa, is the name given to the six *vedāṅgas*, viz. (a) Phonetics (*śikshā*), (b) Ritualistic knowledge (*kalpa*), (c) Grammar (*vyākaraṇa*), (d) Exegetics (*nirukta*), (e) Metrics (*chhandas*), and (f) Astronomy (*jyotisha*); *vidyā*, which may mean either philosophical systems like Nyāya, Mīmāṁsā, etc. or special sciences like *vishavidyā* (science of poisons); *vākovākya* (art of disputation), *itihāsa-purāṇa* (stories of old heroes and heroines and cosmological myths or accounts), *ākhyāna* (stories), *anvākhyāna* (supplementary narratives), *anuvyākhyāna* (glosses), *vyākhyāna* (commentary), *gāthā* (songs and verses), *nārāśaṁsī* (verses about men), *brāhmaṇas* (works containing religious explanations), *kshatravidyā* (science of arms), *rāśi* (arithmetic), *nakshatravidyā* (astronomy), *bhūtavidyā* (demonology or science of life), *sarpavidyā* (science of snakes), *atharvāṅgirasa* (the collective name of the *Atharva-Veda* in some of the Brāhmaṇas), *daiva* (knowledge of portents), *nidhi* (science of divination), *pitrya* (rituals concerning worship of the manes), *sūtra* (rules for the guidance of sacrifices and other ritual), *upanishad*, *śloka* (stanzas found in the Brāhmaṇas), *ekāyana* (science of conduct), *devavidyā* (exegetics), and *devajanavidyā* (arts of singing, dancing, playing on musical instruments, etc.).

Besides indicating these branches of knowledge, arts and sciences, the Upanishads speak of the supreme or highest knowledge, technically called *parā vidyā*, as distinguished from all other types of knowledge termed *aparā*, as is done in the *Muṇḍaka* (I. 1. 4). *Parā vidyā* or the

[1] *Śat. Br.* XI. 5. 6. 8.

knowledge through which the ultimate Reality is known forms the special subject matter of the Upanishads. It is extolled as "the foundation of all arts and sciences," as Vedānta, the final and highest stage of Vedic wisdom. On account of the emphasis thus laid upon this particular type of knowledge, all other subjects of study are thrown into the background and even branded as *avidyā* (ignorance) in some of the Upanishads. From the same standpoint ritualism also comes in for its special share of condemnation. The *Muṇḍaka* (I. 2. 7) openly brands as fools those that seek to perform mere rites and ceremonies. In the later Upanishads, however, we find a more friendly attitude towards the sacrificial cult as leading to a knowledge of Brahman (*Maitrāyaṇī* I. 1).

The method of teaching was catechetical, the pupil asking questions and the teacher discoursing at length on the topics referred to him. It was not that these discourses left nothing for the pupil to think out for himself. The need for introspection and contemplation on the part of the pupil was specially prescribed. Even as regards the initial teaching it is usual for the preceptor to furnish only broad hints and ask the pupil to work them out fully. Study and teaching can, however, only lead to mediate knowledge. For an immediate knowledge of the ultimate Truth and Reality, the pupil must depend upon himself. The acquisition of such knowledge, which means emancipation, is not a matter of study, but of life. It presupposes two things: (i) annihilation of all desire and (ii) annihilation of "the illusion of a manifold universe, of the consciousness of plurality." The means evolved to secure these two ends were what are popularly known as the systems of *sannyāsa* and *yoga*. The former means the casting off from oneself of one's home, possessions and family and all that stimulates desire. *Yoga* teaches the withdrawing of the organs of sense from their objects, and concentrating the mind on the Inner Self endeavours to set it free from the world of plurality and to secure union with the Ātman.

Besides the normal type of instruction under regular teachers settled in their homes, there was another class of institutions which ministered to the never-to-be satisfied needs of the advanced students whose quest for truth and knowledge did not cease with the period of formal studentship, but was continued into the householder's state. Such students improved their knowledge by mutual discussions or by the instruction of renowned specialists and literary celebrities, in search of whom they wandered through the country. These peripatetic scholars in quest of knowledge joined in academic meetings, which were regularly held in

different parts of the country for purposes of philosophical discussion. It was in the learned debates of these academies that the truth about the Ātman, the ultimate Reality and foundation of things, was thoroughly threshed out, and the study and wisdom of the elementary schools were tested and matured through the ordeal of criticism and friction of minds.

In addition to these small circles of philosophical disputants, and *parishads* or academies, of different localities, there was ocasionally summoned by a great king a national gathering or Congress in which the representative thinkers of the country of various schools were invited to meet and exchange their views. One such Congress of *ṛishis* is reported in the *Bṛihadāraṇyaka Upanishad*, the *Śatapatha Brāhmaṇa* and the *Vāyu Purāṇa*. Such Congresses helped further the spread of learning in those days.

II. AS DEPICTED IN THE EPICS

The educational system found in the Upanishads and Brāhmaṇas is developed in greater details during the period covered by the epics and the Smṛiti texts. In the epics we find a man's life divided into different stages. The tender youth is first subjected to a process of rigorous discipline and training, the aim of which is to purge him of all the impurities and imperfections, physical and moral, which obstruct the free operation of the vital principles of growth in the individual. Thus endowed with a sound mind in a sound body, the budding youth blossoms into a noble manhood, which then reproduces itself in the householder's state and through the experience of an active life ripens into the fruit of mature wisdom and moral steadfastness, which are dedicated in the third *āśrama* (stage of life) to the advancement not of the individual, but of the collective life.

Thus the first period of life is that of preparation through education. And this education was in a sense vocational or practical, inasmuch as the preparatory processes, contents and methods of education were varied in accordance with the needs of the different castes or classes of pupils. The legitimate careers of the four castes, viz. the Brāhmaṇas, Kshatriyas, Vaiśyas and Śūdras, were clearly marked out, for which they must prepare in the period of their education. While study was binding upon all belonging to the three twice-born castes, a life of learning or an intellectual career is prescribed only for the Brāhmaṇa. The Kshatriya is destined for the political and the Vaiśya for the economic career. The status of the Śūdra in this stage of society has been much misunderstood.

Here, however, we can do no more than remark that he was not wholly outside the educative influence of the community. It is also to be noted in this connection that though the lines of differentiation of occupation normally followed those of caste, they were not at all rigid and inelastic. They were departed from under difficulties, distress or emergencies.

There are several passages in the epics which summarize the duties and rules relating to the first *āśrama* and applicable to the three twice-born classes. The pupil is to live at the preceptor's house, where he is to put himself under a rigorous course of mental and moral discipline. He should perform Vedic rites and practise restraints, vows and humility. He should adore the morning and evening twilights, the sun, his own consecrated hearth and the gods. He should shake off all idleness and procrastination and purify his soul by saluting his preceptor, by studying the Vedas and by attending to his preceptor's instructions. He should bathe thrice. He is to lead a life of celibacy and beg alms for his preceptor. The *brahmachārin* should go to bed after the preceptor has gone to his bed and rise before he has risen. He is to be simple, of good speech. He should take lessons only when the preceptor asks him to do so. He should take his food and drink after the preceptor has taken his. Great respect for the preceptor is enjoined upon the pupil, who is to pay him the same regards that he pays to his parents. He should never behave uncivilly towards him even under the greatest provocation, and should be always ready to carry out his commands even at the cost of life. Having thus spent his life in the study of the Vedas and observances of vows and fasts, and having given the preceptor his fee, the disciple should bid adieu and return home to become a householder.

The eligibility for studentship is strictly laid down. The teaching of the Vedas must not be imparted to one who has not formally become a disciple, who has not observed vows, or who is of impure soul. No knowledge should be imparted to one whose character is not previously known. It is also laid down that the studies prescribed should be according to capacity.

The general course of the narrative as well as the various episodes of the *Mahābhārata* introduces to us ideal students, teachers, schools, hermitages and other centres of learning. Takshaśilā was a noted centre of learning. One of its famous teachers named Dhaumya had three disciples named Upamanyu, Āruṇi and Veda, whose ideal devotion to their preceptor is set out in great detail. Another picture of ideal studentship is called up by the story of Kacha and Devayānī. Such

stories confirm the Upanishadic traditions regarding the regulations of the system of studentship such as the duty of the student to tend his preceptor's cattle, take care of his fields, serve him at the cost of his life, and give him pleasing presents at the end of the pupilage.

The *Mahābhārata* tells us of typical hermitages where pupils from distant parts gathered for instruction round some far-famed teacher. The most important of such hermitages was that of the Naimisha forest which was like a university. The presiding personality of the place was Śaunaka, to whom was applied the designation of *kulapati*, sometimes defined as the preceptor of ten thousand disciples. Śaunaka attracted to Naimisha a vast concourse of learned men by his performance of a twelve years' sacrifice, of which the most essential *aṅga* or accompaniment was the discourses and disputations of learned men on religious, philosophical and scientific topics. The hermitage of Kaṇva was another famous centre of learning, of which a full description is given (I. 70). It was situated on the banks of the Malinā, a tributary of the Sarayū. It was not a solitary hermitage, but an assemblage of numerous hermitages round the central one of Kaṇva, the presiding spirit of the settlement. It was a forest university where the study of every branch of learning known and developed in those days was cultivated. There were, for example, specialists in each of the four Vedas, in sacrificial literature and art, in orthoepy, in phonetics, metre, grammar and philology. There were also philosophers well versed in *Ātma-vijñāna* (philosophy of the Absolute), in *Brahmopāsanā*, in *moksha-dharma* and in *lokāyata*. There were logicians and specialists in physical sciences and arts such as solid geometry and physics, and also zoologists. Other famous hermitages noticed by the *Mahābhārata* are those of Vasishṭha, Viśvāmitra and Vyāsa. There was also one in the forest of Kāmyaka. But a hermitage near Kurukshetra deserves special notice for the interesting fact that it produced two noted women hermits.

As in the days of the Upanishads, another great educative influence in the country noticed by the *Mahābhārata* was the occasional concourse of learned men at the courts and palaces of kings during the sessions of sacrifices they used to celebrate with due pomp and liberality. The *Mahābhārata* itself was recited from day to day by Vaiśampāyana at such a sacrifice held by Janamejaya, son of Parikshit, which was attended by thousands of learned Brāhmaṇas. Again, it was at the sacrifice of Śaunaka at Naimishāraṇya that the *Mahābhārata* was repeated by Ugraśravas Sauti. Thus the celebration of these royal sacrifices was

the principal agency for the promulgation and popularization of original literary works of national interest and importance. Such meetings also provided, as in the times of the Upanishads, the arena where scholars from distant parts of the country established their reputation in tournaments of debate.

It has already been observed that studentship was the first stage in the life of a member of the twice-born class. But the course of studies was not uniform with regard to all of them. Thus the Brāhmaṇa student was specially trained up for teaching and performing sacrifices for others and receiving gifts, while the special occupation of the Kshatriya was defence or protection of his people. Normally the Kshatriya was to study alone, and the Brāhmaṇa to study as also to teach and perform sacrifices for others. When we come to examine the epic evidence regarding the education of the Kshatriya princes, we find that the Pāṇḍavas are described as having studied all the Vedas and the various treatises on duty. They were further proficient in archery, hand-to-hand fight, club-fight, swordsmanship, the driving of elephants, and in politics, in the stories of old heroes and cosmological myths or accounts. Bhishma committed to the care of Droṇa, learned in all the Vedas, the education of the Pāṇḍu and Kuru princes. Droṇa specially taught his students *dhanurveda* (science of warfare) in all its branches. As remuneration he was given a "neat and tidy house well fitted with paddy and every kind of goods." The same kind of military training was also the portion of the next generation of princes. We read of Abhimanyu and sons of Draupadī that after having studied the Vedas they learnt from Arjuna the use of all arms. The education prescribed elsewhere for the sons of kings includes the following: "Knowledge, the family laws, the science of the bow, the Veda, elephant-riding, horse-riding, chariot-driving, rules of propriety, word-science, music and the fine arts, legends and tales." From the *Rāmāyaṇa* as well as the *Mahābhārata* it is clear that the age of sixteen marked the end of boyhood, before which the prince was normally expected to have acquired the military arts and qualified for the vocation or mission of his life. If this was the case, the laws relating to the Vedic study must clearly be later than the epic; and the active young knight and the busy trader must have performed their duties toward the Veda in a very perfunctory way, if at all. In the *Rāmāyaṇa* (I. 80. 27) the list of subjects the king is expected to study includes *dhanurveda*, Veda, *nītiśāstra* (politics) and the art of riding elephants and cars, besides the art of painting, writing, jumping

and swimming. In another passage we have mention of writing and numbers, of fine arts, logic and politics. Several similar lists occur in the *Mahābhārata*. One list enumerates the following: Medicine with its eight branches, *Ṛig-Veda*, *Sāma-Veda*, *Yajur-Veda*, *Atharva-Veda*, all scriptures, history, *upavedas*, *vedāṅgas*, *vāṇī* (speech) of seven kings, *sāmans*, *stuta-śastras* (kinds of hymns), various kinds of *gāthā*[1] literature, commentaries, dramas, epics and stories.

As regards the military training of the princes, the entire military science and art of the age seem to have been comprehended by the generic term *dhanurveda*, the *dhanus* or bow being regarded as the type or symbol of all weapons or methods of warfare. It included the arts of mounting a car, leaping down, running, leaping easily, discharging weapons simultaneously and of advancing and retreating, besides the arts of fighting with club, sword, car, bow, arrow and missile. It is needless to add that though it was called a *veda* (science) to denote its literary existence, the study of the *dhanurveda* used to be principally by practice.

III. AS DEPICTED IN THE SMṚITI ŚASTRAS

The account that we get regarding the educational system of the Indians from the Smṛiti literature is rather elaborate. The pupil's first introduction to education was made by the performance of a ceremony called *vidyārambha*, with which the children of all castes were to commence the learning of the alphabet. The age fixed for this was five for all castes alike. But the formal and regular introduction to education was made by the ceremony of *upanayana*, which was ordained for the Brāhmaṇas, the Kshatriyas and the Vaiśyas, under different rules. Members of these castes, however, who had committed misdeeds as also the Śūdras were not eligible for this ceremony. The rules of initiation vary with the different castes. The Brāhmaṇa is to be initiated in spring, the Kshatriya in summer and the Vaiśya in autumn. The age-limits for the *upanayana* are eight to sixteen for the Brāhmaṇa, eleven to twenty-two for the Kshatriya and twelve to twenty-four for the Vaiśya, though some variations are given in a few of the *śāstras*.

A principle seems to have been followed in determining the age-limits of instruction for the different castes. The commencement of education by a Brāhmaṇa at the earliest age may be for two reasons: he attains intellectual eligibility earlier than the boys of other castes, and he has also to undergo a far more extended and deeper course of study

[1] Religious poetry other than Vedic.

and discipline. With regard to the pupils of other castes, the period of their theoretical studies or mere book-learning must be much shorter than that of the Brāhmaṇa, so that they may take to their respective professions in the practical spheres of life at the age most suitable for the purpose. Great spiritual significance is attached to the ceremony, the initiation being regarded as a sort of second birth.

The obligation for men of the three twice-born castes to get themselves initiated at the proper age could not be violated with impunity. According to Manu such violators are to be designated *vrātyas* (outcastes), with whom there could be no connection either by marriage or through the Veda. Such defaulters could, however, re-enter the orthodox fold by the performance of certain prescribed penances, which were often of a severe nature. Considering the severity of the penalties, it is apparent that the institution practically worked as a compulsory system of education among the three twice-born castes of the community.

Elaborate details are given regarding the ceremony of *upanayana*, which according to the texts means the introduction of the student to *brahmacharya* by the teacher himself. It will not be uninteresting if some of them are given below: Four special marks are prescribed for the *brahmachārin* when he is about to be initiated, namely, (1) garment, (2) skin, (3) girdle and (4) staff, all of which, however, varied with the different castes. They were regarded as symbols, the meanings of which are fully laid down in several books. When the intending pupil is thus properly dressed, he has to satisfy some preliminary queries put to him by the teacher before he initiates him. The first query is as regards his name and lineage. The second asks him to declare formally that he wants admission as a pupil. According to some the teacher must not admit to his teaching one whom he does not know. Certain moral conditions are also laid down qualifying a pupil for admission. He is to be pure, attentive, one of controlled passion, possessed of good memory, chaste and well-behaved. The student is then committed to the charge of the gods with prayers also varying with his caste.

Some of the prayers used in the performance of the ceremony indicate the objects of education. They are both religious and secular, and such as are necessary for the harmonious development of a man's nature. The pupil prays to the gods for knowledge, offspring, splendour, strength, vigour, fame, intelligence, bliss, prosperity, insight and holy lustre. The spiritual bond that connected the teacher with the pupil was regarded as sacred and inviolable.

The period of studentship or *brahmacharya* begins with what is called the *sāvitra vrata*. Observed as a preparation for the instruction of the Veda, it normally lasted for three days, though it might extend to one year. During this time the pupil had to live on special food and beg that food firstly of his mother and then of other women relatives.

The studentship formally begins after the performance of the *sāvitra vrata*. The restrictions regarding food are then partly taken away. The general rule as regards food is that students should eat the fragments of food given to them by their teachers. The hour and manner of eating also are laid down in some detail.

The standing duties to be performed by the student in the interest of his teacher and of his own discipline and moral life were begging, fetching fuel, water, flowers and other articles of sacrifice and tending the sacred fire at the preceptor's home. These duties were more of the nature of services rendered to the teacher. Besides these, various regulations are laid down governing the student's life and conduct and manner and method of study.

As on the occasion of the *upanayana* ceremony, the student's dress was made up of: (1) girdle, (2) staff, (3) lower garment, (4) upper garment and (5) sacrificial string, which varied according to different castes. Rules are also prescribed for the arrangement of hair, e.g. those of shaving the head, wearing the hair tied in a braid or keeping merely a lock on the crown of the head tied in a braid. From the class of duties prescribed for the student we catch a glimpse of his daily routine. He is to rise from bed before his teacher and sunrise. Then he is to bathe and purify himself. Even the manner of bathing is laid down, so that it could not be a sport. The bath is to be taken thrice a day. His next duty is to perform his morning devotions with a concentrated mind in a pure place outside the village. The evening prayer is also to be similarly performed. Returning home after his twilight devotions, the student is to offer oblation of water to the gods, sages and manes, worship the images of the gods and place fuel on the sacred fire. He must avoid the following luxuries: perfumes, garlands, anointing of the body, collyrium, shoes, umbrella, parasol, carriage and sleep in the daytime. He must also avoid singing, playing on musical instruments, and dancing, at which he must not even look. He must not go to assemblies (for gambling etc.) nor to crowds assembled at festivals. He must assiduously cultivate certain moral qualities such as freedom from sensual desire, anger, envy and covetousness. He is to avoid gossiping,

backbiting and lying. He must not injure living beings. He must not talk with women more than is strictly necessary.

Utmost respect is enjoined on the part of the student towards his preceptor who is always to be obeyed except when ordered to commit crimes which cause loss of caste. Elaborate rules are given how a student is to behave himself in the presence of his teacher, all indicative of extreme regard for him.

The course of study included the whole Veda together with the *rahasyas* ('secrets') as stated by Manu (II. 165). According to Vishṇu (XXX. 34-38) the Purāṇas, Itihāsas, Vedāṅgas and the Institutes of sacred law are also included among the different subjects of study. In yet another place the knowledge imparted to the pupil is stated to be of three kinds, viz. worldly knowledge (related to poetry, rhetoric and the like), sacred knowledge (relating to the Vedas and Vedāṅgas) and knowledge of the Supreme Spirit. Further, the course of Vedic studies was carefully graduated corresponding to a graduated course of special observances or practical discipline, whereby the gradual development of the inner capacities answering to the growing difficulty of the subjects of study was sought to be secured.

The period of studentship according to the *Sūtras* is to consist ordinarily of twelve years for the mastery of each Veda. This would require forty-eight years for the mastery of all the Vedas. But Baudhāyana, who notices these rules, was not in favour of a too long protracted period of studentship. The academic term was, however, much shorter than what is indicated by the above rule. Vedic studies lasted for about five months and a half during a whole year from the full moon of the month of *Śrāvaṇa* (July-August) to the full moon of the month of *Pausha* (December-January). During the period of interruption of Vedic studies the students are, however, allowed to continue their private study. Besides, the academic term was punctuated with numerous holidays. Such interruptions were allowed on the occasion of certain festivals, religious or otherwise, certain political events such as war and invasion, on the occurrence of certain natural phenomena like thunder, rain and earthquake or when some bad omens were heard, e.g. the howling of jackals or braying of donkeys. It was also forbidden to study in certain places like the burial ground, a high road, etc. Lastly, there is an interesting regulation to the effect that if some co-learners are away, the study of the Vedas should be stopped. In connection with some of these rules regarding interruption, it should be noted that they seem to apply

to the study of new parts of the Veda and not of the parts already learnt, nor to the study of the *aṅgas* (auxiliaries) of the Veda.

The technical name for rules of Vedic study was *anuvāchana*. The method of instruction was oral. In the first place, the text of a hymn of the *Ṛig-Veda* is taught to the student. Secondly, the *ṛishi* (seer), deity and metre of the hymn are indicated to him. In this way the teacher is to go on reciting the hymns belonging to each *ṛishi* or each *anuvāka*, which make up the lesson for each day. The course is, however, much whittled down for the students of other castes. At the beginning and on the completion of the study of each of the *kāṇḍas* (books) of the *Kṛishṇa Yajur-Veda* certain ceremonies are to be performed. Among other rules of Vedic study may be mentioned the following: Out of term the student must not study any part of the Veda which he has not learnt before. Nor shall he study during term some new part of the Veda in the evening. Several minor details as to the manner of oral instruction are laid down, which all show the great care bestowed upon the correct pronunciation or repetition of Vedic *mantras*.

We have indicated briefly the rules and regulations governing the life and studies of the *brahmachārin* during the period of his stay at the teacher's house. But some students would elect to make the period of that stay life-long without any desire for the householder's life or the married state. Such students are known as *naishṭhika brahmachārins*. It is probably for these that such long periods of studentship as twenty-four, thirty-six or forty-eight years are prescribed. This is in keeping with the earliest system of the Brāhmaṇa period, when there were agencies and arrangements for the continuance of studies beyond the normal period of formal studentship. The *Sūtras* also continue the tradition of the Upanishads in another respect. Young Brāhmaṇas, as in the days of old, went from one teacher to another learning from each what he knew. The rules requiring a pupil to stay with one and the same teacher refer only to the principle that the pupil must stay with his teacher until he has learnt the subject which he began with him. In case of incompetence of the teacher, the student is, however, expressly permitted to go to another teacher. He is also allowed under certain conditions to forsake a teacher who transgresses his duties through carelessness or knowingly.

High qualifications are required of a teacher. He is to be a man in whose family sacred learning is hereditary, who himself possesses it and who is devout in following the law. There also seem to be different

classes or grades of teachers. The *āchārya* is one who initiates the pupil and teaches him the Vedas without any remuneration. The *upādhyāya* teaches the pupil only a portion of the Veda or the *aṅgas* of the Veda for a fee. The teacher must adopt and love the pupil as his own son, and teach him the sacred science in its entirety with whole-hearted attention. He must not exploit the regulation enjoined upon the pupil to serve the preceptor for his own purposes.

These old-world teachers were against hard punishment being inflicted upon pupils. Bodily punishment was permitted only as the last resource, when other means of reformation failed. Even then strict limits were placed upon it.

We have already seen that the *āchārya* taught without any fee, purely as a matter of religious duty. But he could accept remuneration from a pupil whose study was completed. Such payment of fee by the pupil is, however, enjoined more as a religious act, finally bringing to a close the period of studentship and marking the fulfilment of a sacred vow, than as any kind of barter. This absence of any economic relation between the teacher and the taught allowed the teacher complete independence as regards the choice and admission of the pupil. A most thoroughgoing test of mental and moral fitness was imposed on the student, whose fulfilment of it alone gained him admission. These tests for admission and the regulations governing the life of the student after admission were determined by the ideals and aims of that education. The development of the character of the student was deemed one of the essential objects of education. Indeed, from the elaborate regulations which we have already considered at some length it is evident that the part of education that deals with life fills a larger place in the ancient pedagogic scheme than the part that deals with the mere intellect. The aim was to produce not mere recluses or scholars, but whole men, ideal householders who would perfect the family, society and country.

It was a system of universal education for the Indo-Aryan people that is depicted in the Smṛiti texts. The nation was in the making in the schools. All had to learn the Veda; the only privilege of the Brāhmaṇas was that they alone were allowed to teach it. Neglect of study was visited with not mere social degradation; there are indications that the State enforced the system of compulsory education framed by society by penalizing a village that even acquiesced in the culpable ignorance of the Brāhmaṇas by giving them alms to which they were not

entitled. Sometimes exceptions were allowed to the rule that only the Brāhmaṇas could be teachers.

The studentship was brought to a close by the ceremony of *samāvartana* (the returning home of the student), which included a number of acts signifying the end of austerities imposed upon the condition of studentship.

IV. AS DEPICTED IN THE CHINESE RECORDS

1. FA-HIEN—FIFTH CENTURY A.D.

After the lapse of a few centuries we again obtain a somewhat full picture of the working of the educational institutions of India from the accounts of the Chinese travellers who visited India in the fifth and seventh centuries of the Christian era. Such an account coming from eyewitnesses who are foreigners is doubly interesting and trustworthy. We have no means of positively ascertaining how far the educational conditions depicted in the sacred texts were in actual existence, for they are naturally concerned more with the exposition of the ideal conditions, precepts and maxims—with what ought to be rather than with what is.

We shall consider here the accounts left by Fa-Hien, Hiuen Tsang and I-Tsing of the conditions of Indian learning in those days. At the very outset we must remember that the very fact of pilgrimage of Chinese scholars like Fa-Hien and Hiuen Tsang to India testifies to the tribute paid by China to the sovereignty of Indian thought and culture, which made its influence felt beyond the bounds of India itself in distant countries which might well be regarded as then constituting a sort of greater India. Fa-Hien, Hiuen Tsang and I-Tsing were but individual members of glorious bands of missionaries who during a period of nearly ten centuries (from Kanishka to Dharmapāla) came to India on religious and literary pilgrimage to drink at the very fountain of culture they professed.

Fa-Hien came to India in company with a band of pilgrims on a mission of collecting in India the *Vinaya* texts for the purpose of the Buddhist *saṅghas* of China. Thus his observations were confined only to that aspect of Indian thought and life which was associated with Buddhism. Within this limited range of enquiry his evidence is, however, refreshingly realistic and concrete, being drawn from his first-hand observation and personal experience.

Buddhist India in Fa-Hien's time embraced a large area, extending from Udyāna on the north-western frontier to Tāmralipti (Tamluk) on the east, and was noted for the abundance of its monasteries, those strongholds and distributing centres of Buddhist culture which enabled it to maintain its hold upon the country, and helped to spread it evenly among the different parts thereof. Along the course of his journey from the north-west across the Punjab along the Jumna-Ganges valley down to Tamluk in Bengal, he notices almost numberless monasteries full of monks following either the Hīnayāna or the Mahāyāna form of Buddhism. It is needless to notice them all. Only a few important ones may be mentioned. Pāṭaliputra was one of the most prominent centres of Buddhist learning in those days. There were two monasteries, one Mahāyāna and the other Hīnayāna, both containing about six or seven hundred monks. Besides offering elementary instruction to the younger monks and novices, these monasteries served as centres of advanced instruction for the mature monks who resorted to them from all quarters. This was due to their having as their residents several far-famed teachers. One of these was a Brāhmaṇa named Rādhāsvāmī, a professor of the Mahāyāna, of wide learning and spotless purity. The other distinguished teacher seen by Fa-Hien was also a Brāhmaṇa Buddhist named Manjuśrī.

Life in these monasteries was governed by regulations which follow the lines laid down in the *Vinaya*. The monasteries were maintained by the endowments of the laity including kings and merchant-princes. They endowed the *vihāras* with fields, houses, gardens and orchards and other necessaries such as food and clothing, which were engraved on copper plates.

The time-honoured Brāhmaṇical method of oral instruction still obtained even among the Buddhists. The subjects of study were not yet written down. This was a great disappointment to the traveller who set out on his travel with the object of finding copies of the *Vinaya*. Manuscripts of sacred texts which he could copy were found in the Mahāyāna monastery at Pāṭaliputra and in the monasteries in Tāmralipti. Thus oral instruction was the only educational method followed in the north, while the rule was relaxed in the east, where the aid of written literature to education was recognized.

The manuscripts copied out by Fa-Hien give us some idea of the works of Buddhist literature which were in request in China and also of the usual subjects of study of the monks in India. They comprised



SĀRNĀTH

A Site Under Excavation

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TAXILA

A Partial View of Excavation

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the following: (1) The *Vinaya* containing the *Mahāsāṅghika* rules, (2) the *Sarvāstivāda* rules in six or seven thousand *gāthās*, (3) a *Sūtra* of 2,500 *gāthās*, (4) one chapter of the *Parinirvāṇa Vaipulya Sūtra* of about 5,000 *gāthās*, and (5) the *Mahāsāṇghika Abhidharma*. It is interesting to note that the study of Sanskrit was continued in these Buddhist monasteries. At the Pāṭaliputra monastery Fa-Hien stayed for three years learning Sanskrit books and the Sanskrit speech.

Besides individual study and meditation, the monks had always to meet together in the common room or hall of the monastery for purposes of religious discussion.

The Buddhists alone had not the monopoly of leading the people. There were many other sects and systems of thought hardly less influential in the country than the Buddhists. In the Middle Kingdom alone Fa-Hien noticed no less than ninety-six sorts of views different from Buddhism, all having multitudes of followers of their own. These non-Buddhist monastic communities and their lay followers were well known for their charity and philanthropy. Besides the Brāhmaṇical sects of ascetics Fa-Hien also observed the companies of the followers of Devadatta as "still existing."

There is hardly any doubt that the educational conditions of India observed by Fa-Hien had been prevailing in the country in still earlier times. There is, however, no positive evidence that may at present enable us to trace the origin and growth of these historic monasteries of Buddhism, which already in Fa-Hien's time, and in the times anterior to him, had become such important and flowering centres of Buddhist education and learning that their fame travelled beyond the limits of India and caused a large movement of foreign scholars towards them for instruction, which continued steadily for nearly ten centuries.

2. HIUEN TSANG—SEVENTH CENTURY A.D.

When Hiuen Tsang came to India in 629 A.D., the facts and conditions of Indian education and culture had considerably changed since Fa-Hien's time. He travelled through different parts of India for fifteen years visiting royal courts, holy places and monasteries, in some of which he also stayed to learn. Brāhmaṇism was visibly in the ascendant. He also noticed the growth of the Mahāyāna school of Buddhism. In spite of his chief interest being in Buddhist life and thought, Hiuen Tsang has recorded certain observations on Brāhmaṇical education and culture which are all the more valuable on that score.

The ascendancy of Brāhmaṇism was observable from several signs. The general name given to India was *Brahmarāshṭra* (country of Brāhmaṇas). Sanskrit had become the language of the cultured classes, in which even the most famous Buddhist teachers wrote. Besides, numerous ascetic orders or sects belonging to the orthodox fold arose, each being distinguished by its special garb.

As regards Brāhmaṇical education the students had to learn " the four Veda treatises," viz. the *Āyurveda*, the *Yajur-Veda*, the *Sāma-Veda* and the *Atharva-Veda*. Instruction was imparted orally and was characterized by much earnestness and painstaking labour on the part of the teacher. The pedagogic method followed was that of trying to quicken and rouse the latent powers of thinking in the student and lead him on to conclusions.

The period of studentship was fairly long. It normally ended when the pupil was thirty years old. Hiuen Tsang alluded to the practice, referred to in the earlier Smṛitis, of the retiring students paying the preceptor his fees for educating them.

The race of *naishṭhika brahmachārins* who chose to consecrate themselves to lifelong studentship and celibacy in quest of further learning was not extinct in India in Hiuen Tsang's time. Renouncing worldly possessions, name and honour, these men lived in self-imposed poverty and hardship, spending all their time in the pursuit of different arts and sciences. The system of Brāhmaṇical education, which was a unique achievement of the Hindu genius, thus fulfilled the highest aim of a school of learning, namely, to produce in its alumni an absorbing love of learning for its own sake. The ancient Hindu schools of learning poured streams of scholars in whom the love of learning grew to be the overmastering passion, compelling the consecration of their entire life to its satisfaction. The methods of teaching pursued in these schools were not mechanical, soulless and oppressive, but living and natural, which helped to generate in the young learners a spirit of enquiry, of the quest after truth, which is the highest gift a teacher can bestow on them. The honour accorded to these learned men by kings and courtiers and common men was due as much to their intellectual eminence as to their moral superiority. Their lives were an embodiment of the great ideal of " plain living and high thinking." These men left society only to qualify themselves for serving it the better as teachers and preachers, lecturing and travelling through the country without knowing any fatigue, and thus aiding in the spread of learning and public instruction.

We shall now proceed to deal with the conditions and circumstances of Buddhist education as observed by Hiuen Tsang. The monasteries were all great centres of learning, and the monks availing themselves of it were numerous. In Hiuen Tsang's time Buddhist thought was represented by a good number of schools, each of which claimed and counted many monasteries specializing in the study of its doctrines and practices. Consideration of space forbids the mention of different places and monasteries visited by Hiuen Tsang in India. We know from his account that though Buddhism was on its decline in his time, yet the number of monks and monasteries was fairly large. The monasteries that were seen to be in working order and tenanted by monks numbered approximately five thousand. The total monastic population in the parts of India visited by Hiuen Tsang (including Ceylon) was as much as 2,12,130. These monasteries amply justified themselves as educational institutions by producing some of the greatest men in the history of Buddhist learning and religion. It is to Hiuen Tsang that we owe the information by which we are enabled to trace the schools traditionally associated with the following Buddhist celebrities: Asaṅga, Vasubandhu, Pārśva, Aśvaghosha and Nārāyaṇabhadra.

The record of these monasteries in producing great scholars was also continuing even at the time of Hiuen Tsang's travels. He broke his journey at several monasteries which were renowned as seats of learning, either for their teachers or for their libraries of rare books. Thus in Kashmir the king appointed Bhadanta with his disciples to minister to the need of the pilgrim and twenty clerks to copy out the manuscripts he wanted from the Palace Library, and under these satisfactory arrangements Hiuen Tsang spent two years studying certain *Sūtras* and *śāstras*. In the Nagaradhana Vihāra in the Jalandhara country, Hiuen Tsang found a distinguished scholar named Chandravarmā, under whom he studied for four months. In one of the monasteries of the Srughna country he spent one whole winter and one-half of the following spring in receiving lessons from the learned scholar Jayagupta. In a monastery in Matipur he came across a profound scholar, Mitrasena by name, then ninety years of age, who was a disciple of Guṇaprabha, one of whose works was in the library. Hiuen Tsang remained there several months for studying it. The Bhadra Vihāra was a noted college in Kānyakubja, where Hiuen Tsang stayed for three months studying under Vīryasena. In Monghyr the pilgrim stayed for a year, receiving instruction from the teachers Tathāgatagupta and Kshāntisiṁha. The monks of the Pūrva-

śaila and Avaraśaila monasteries were noted for their proficiency in *Abhidharma* works, for the study of which the pilgrim spent there several months. In the Kāñchīpura monastery he discussed *yoga* texts with many *bhikshus*, who had just arrived there from Ceylon. In addition to the monasteries singled out by Hiuen Tsang for their teachers or books, there were a few others for which he has a general word of commendation. These monasteries enjoyed an almost all-Indian reputation as seats of Buddhist learning and culture. Some such were the Kanishka Vihāra at Purushapura, the monastery of Pushkarāvatī, the monasteries in Udyāna, the Tilosrika monastery of Magadha, the Raktāmṛita monastery in Karṇasuvarṇa and the Kāñchīpura monastery in the South.

These monasteries were in charge of the higher education of the country, which was led up to by a well-developed system of elementary education. The monasteries were like colleges, to which students were admitted on completion of their preliminary education, of which a separate account is given by Hiuen Tsang. A child is first introduced to a *Siddhin* (which is from the expression *siddhirastu*—may there be success!) or a primer of twelve chapters giving the Sanskrit alphabet and the combinations between vowels and consonants. After his mastery of this book, he was introduced at the age of seven to the " great *śāstras* of the five sciences," viz. *vyākaraṇa* (grammar), *śilpasthānavidyā* (science of arts and crafts), *chikitsāvidyā* (science of medicine), *hetuvidyā* (logic) and *adhyātmavidyā* (philosophy), which according to Watters, included " the metaphysical and argumentative treatises of the great doctors of *Abhidharma*." It is thus clear that the elements of both secular and religious knowledge, of philosophical and practical subjects, entered into the composition of the elementary course of education meant for the sons of Buddhist parents, so that it provided that necessary basis of a good general culture upon which specialization could be successfully attempted in the monasteries. The Buddhist's qualification for the religious teacher or leader demanded a knowledge of the practical arts and crafts necessary in serving humanity, such as a knowledge of medicine. We read, for instance, about Guṇabhadra that he had learnt in his youth the *śāstras* of those five sciences together with Astronomy, Arithmetic, Medicine and Exorcism.

Regarding the higher education as imparted by the monasteries, the best details are given by our pilgrim in connection with the working of the Nālandā University. The education of the monasteries may be considered under two aspects, theoretical (concerning curricula and

studies) and practical (concerning conduct and discipline). The studies and curricula adopted by a monastery would depend upon the particular sect of Buddhism with which it was connected. As many as eighteen sects of Buddhism are mentioned by Hiuen Tsang, besides the grand division into the Great and Little Vehicles. Each sect had its own special literature bearing upon its characteristic tenets and practices, and included a number of monasteries for their study and propagation. Sometimes, however, a monastery would accommodate monks of different schools, and sometimes even students so far apart in their tenets and practices as the Tīrthikas and Buddhists and Brāhmaṇas. This is an important fact to bear in mind. It demonstrates that the so-called Buddhist monasteries were not run like denominational universities in the narrow spirit of sectarian exclusiveness.

In general the monasteries confined their studies and teachings within the limits of the Buddhist canon, whether *Vinaya*, *Abhidharma* or *Sūtra*, but we read of a few instances where the usual limits seem to have been transgressed by the inclusion of some subjects of study not strictly connected with the traditional Buddhist scriptures, such as books on magic and *yoga*.

As regards the methods of study, the old Brāhmaṇical division between reciting the texts and understanding their meaning seems to have been still in force. But undoubtedly much greater stress was laid upon the ability to expound the texts in public meetings, at a time when much of the intellectual life of the country was occupied with controversies and discussions between the exponents of the different schools of thought. Accordingly monastic education devoted special attention to the development in the alumni of the powers of public debate and exposition, which were highly prized and rewarded. The cultivation of such intellectual capacities was systematically stimulated by recognition awarded on the basis of examinations. Besides the periodical examinations, the ordinary classification of the inmates of the monasteries was meant to promote the same end. Each community of Brethren had its own hierarchy promoted according to a recognized system, which is thus described by Hiuen Tsang: "The Brother who expounds orally one treatise in the Buddhist canon, whether *Vinaya*, *Abhidharma* or *Sūtra*, is exempted from serving under the Prior; he who expounds two is invested with the outfit of a Superior; he who expounds three has Brethren deputed to assist him; he who expounds four has lay servants

assigned to him; he who expounds five rides an elephant; he who expounds six rides an elephant and has a surrounding retinue."

Concerning the practical or moral side of monastic education, the discipline and conduct of the monks were regulated according to a system. In the first place, like the *brahmachārin* in the Brāhmaṇical system of education, much menial work was expected of the Buddhist monks too. The secular affairs of a monastery were generally placed under an officer selected from the monks called the *karmadāna*, whose orders were to be obeyed by all the common monks for all kinds of menial work required. Exemption from this work had to be earned, as we have seen, by a monk proving himself proficient in one subject or section of the canon and skilled in its eloquent exposition. Secondly, above the stage of manual work, there were other practices binding upon the monks for their moral growth, which varied with the sects to which they belonged. Thirdly, there was the system of public examination and recognition of moral as of intellectual merit. Fourthly, the discipline within the monastery was secured by a system of punishments graded according to the offences committed. Lastly, Hiuen Tsang refers to another feature in the religious education of the monks, viz. the practice of their offering worship to the images or pictures of their respective patron-saints set up in connection with the monasteries.

The academic debates and tournaments, which formed so large a part of the intellectual life of the country under the Brāhmaṇical system of education from the days of the Upanishads, were also a marked characteristic of the Buddhist literary world. Hiuen Tsang has collected the more important traditions and facts on the subject, from which we realize how these intellectual tournaments, by no means rare in their occurrence, brought together scholars from distant parts of India, promoted active intercourse between different monasteries representing different schools of thought, and created a broad brotherhood of letters in which were united the intellectuals of different provinces. We find that even the distant South, overcoming the many physical factors of isolation, won for itself an honoured place in the Indian intellectual system as centred in the northern parts of India like Nālandā in Magadha. Lastly, we may note that this phase of intellectual life was encouraged by the paramount Indian sovereign at the time of the pilgrim's visit, viz. Harsha the Great, who used to bring the Brethren together for examination and discussion and reward the meritorious.

3. I-TSING—SEVENTH CENTURY A.D.

I-Tsing who set foot on Indian soil in A.D. 672, within a few years after Hiuen Tsang had left it (645 A.D.), has left us an account which forms a valuable addition and supplement to the latter's.

The predominance of Brāhmaṇism over Buddhism continued in his time. India was then known by the name of *Brahmarāshṭra*. Sanskrit had become the language of even the Buddhist works and a subject of study for the Buddhist monks. He mentions no less than ninety-six heretical schools of thought and refers to the Sāṁkhya and Vaiśeshika systems of philosophy.

Elementary education began at the age of six years. The first book of reading was called *Siddhirastu*, which gave forty-nine letters of the alphabet and ten thousand syllables arranged in three-hundred verses. This primer was finished in six months. The second book of reading was the *Sūtra* of Pāṇini containing one thousand *ślokas*. Next followed works on *dhātu* (verbs), the three *Khilas* (supplements), which the boys began at ten years of age and finished in three years. The book to be next read was the famous *Kāśikā Vṛitti*, " the best " of all the commentaries on Pāṇini's *Sūtra*, composed by Jayāditya.

After having studied the commentary the students began to learn composition in prose and verse and devote themselves to logic and metaphysics. Under logic they studied the introductory work composed by Nāgārjuna called *Nyāyadvāra-tarkaśāstra*. They also studied the *Jātakamālā* composed under the patronage of Emperor Harsha and the *Suhṛillekha*, an epistle in verse, addressed by Nāgārjuna to his patron, King Jetaka Sātavāhana, known for its beauty of style and for its earnest exposition of the right way.

Here the course of elementary education ended. Properly speaking, it comprised the study of the five subjects or *vidyās*, viz: (1) *śabdavidyā* (grammar, lexicography), (2) *śilpasthāna-vidyā* (arts), (3) *chikitsāvidyā* (medicine), (4) *hetuvidyā* (logic), and (5) *adhyātmavidyā* (philosophy). We have noticed above the details given by I-Tsing as regards (1), (4) and (5). Elsewhere he also notices that the medical science was divided into eight branches dealing with (1) sores etc., (2) diseases above the neck, (3) bodily diseases, (4) demoniac diseases, (5) medicines for counteracting poisons, (6) diseases of children, (7) means of rejuvenation, (8) means of invigorating the legs and body.

After the completion of elementary education there were various courses for specialized studies. One such was in *vyākaraṇa*, which was

"the name for the general secular literature." The following text-books were prescribed for it: (1) *Chūrṇi, i.e.* Patañjali's *mahābhāshya* on Pāṇini, (2) the *Bhartṛihari-śāstra,* (3) the *Vākyapadīya,* and (4) *Peina* (probably Sanskrit Veda), a grammatical work composed by Bhartṛihari. The students completing this advanced study were regarded as masters of grammatical science and earned the title of *bahuśruta*.

There were again courses of specialization in religious or priestly studies, which were organized and offered by the monasteries. The most famous of such seats of learning in I-Tsing's time were Nālandā monastery in Central India and that "in the country of Valabhi in Western India."

The admission to these monasteries and to the priesthood or ordination was strictly in accordance with the rules prescribed in the *Vinaya* texts. The regular course of monastic education began with the *upādhyāya* imparting to his pupil the contents of the *Prātimoksha,* as the first lesson, explaining to him the character of the offences, and how to recite the precepts.

After this the candidate learnt the *Vinaya Piṭaka,* then the *Sūtras* and *śāstras*. I-Tsing also refers to the *Vinaya* practice, requiring for each priest under training two teachers called the *upādhyāya* and the *karmāchārya,* the former being the teacher of personal instruction, and the latter the teacher of discipline who "teaches the pupil rules and ceremonies."

Besides the ordinary and traditional curriculum of priestly studies, some new works seem to have been included in course of time. Among these I-Tsing mentions the two hymns of one hundred and fifty and four hundred verses attributed to Mātṛichetas, and the *Buddhacharita Kāvya* of Aśvaghosha. Advanced studies and specializations were also carried on in a few other subjects, on which a considerable literature had developed, such as *yoga,* Logic, Metaphysics and the Āgamas.

As education in the monasteries aimed at both intellectual and moral growth, the rules regulating the daily life of the inmates were framed with an eye to both these aims. The relations between the teacher and the pupil were on the lines of the *Vinaya* rules on the subject. The pupil rendered the teacher personal service in a number of ways. The teacher inspected the daily conduct of the pupil and warned him against trangressions and defects. He also reciprocated the devoted service of the pupil by affectionate treatment during the latter's illness.

The monks of the monasteries were suitably graded according to their capacities and the level of advance they attained. The lowest grade



THE INTERIOR OF A CHAITYA HALL

Courtesy: Mr. O. C. Gangoly

was that of the Śramaṇera, who was promoted after his *upasampadā* ordination to the grade of the *dahara bhikshu*, and higher than he was the *sthavira*. The highest grade for a *bhikshu* was that of *bahurśruta*. These gradations of the monks in a monastery were indicated not merely by titles but also by privileges.

In addition to the religious section, which imparted instruction to the monks in sacred literature only, a Buddhist monastery had also a secular section, to which were admitted students called *brahmachārins* who had no intention of renouncing the world and becoming Buddhist monks. This section was very popular in I-Tsing's time. We have already seen how the *bhikshus* in those days made themselves proficient in both sacred and secular literature. Besides organizing secular courses of study and throwing them open to non-Buddhist students or students from the Buddhist lay public, the monasteries still further widened their scope and sphere of usefulness by admitting to their religious sections even unordained students. These were called *mānavas*, who might be potential but not actual monks, with whom they only agreed in seeking instruction in the Buddhist scriptures.

Both these classes of secular students, the *mānavas* and the *brahmachārins*, were also permitted to be resident in the monasteries. But they had to bring their own boarding expenses. It was also open to the monasteries to receive grants of food for these classes of students. The Buddhist monasteries of the time were thus seats of both sacred and secular learning resorted to by the Buddhists as well as non-Buddhists. The Buddhist monks, who came practically to have the monopoly in this learning and culture, did not limit their sympathies and valued services within the confines of their own church and faith. They recognized in a noble spirit of toleration that the country was above creed, and culture above church.

As regards their successes, the monasteries produced some of the highest types of intellect and character. One of their principal aims was to produce successful preachers and dialecticians. The institutions most successful in producing this kind of intellectual eminence in I-Tsing's time were the monasteries at Nālandā and Valabhi. The friction with the best minds that collected at these two famous centres of Buddhist learning was an ideal means of developing and sharpening the wits and powers of debate.

The learned disputations which formed the characteristic feature of Indian intellectual life were held not merely in the monasteries, but also

at the courts of kings under the encouragement of the State. The kings even in I-Tsing's time, as in the days of old, were fond of organizing intellectual tournaments at which superior knowledge might be tested, rewarded, recognized and proclaimed. I-Tsing mentions the literary celebrities of India in his time. Among the most distinguished may be mentioned Jñānachandra of the Tiladha monastery in Magadha, Ratnasiṁha of Nālandā, Divākaramitra in Eastern India, Tathāgatagarbha in the southernmost district and Rāhulamitra in the Tāmralipti monastery. All these men were renowned as much for their character as for their learning, in both of which they aspired after the highest ideal.

Direct worship of images, *chaityas* and *stūpas* set up in connection with the monasteries was a part of the religious training they provided. Along with the needs of mental and moral training, the monasteries, strange as it may appear, were not unmindful of the need of physical health for the monks, for which regular exercises were prescribed.

While their studies and discipline were controlled by their teachers, the monks had other matters in their own collective control. If we may generalize on the basis of what I-Tsing says of a particular but a typical monastery (viz. that of Tāmralipti), the monasteries in his time were democratically governed, and not governed by a bureaucracy of the kind described in the *Vinaya Piṭaka*. The bureaucratic element in their management was represented by the solitary official called *karmadāna*, the managing monk, but his powers seem to have been very limited. The monastery of Nālandā was also democratically governed.

SIDELIGHTS ON THE HINDU CONCEPTION OF SOVEREIGNTY

Helped by the precept of the equality of man which challenged the hardening regulations relative to the various castes—the Hindu *varṇāśrama-dharma*; fostered by its superb missionary and monastic organizations; aided by the convenient practice of conveying its teachings in a language obviously familiar to the masses[1]; and enthusiastically served by monarchs, one of whom at least ranking with the greatest kings the world has ever seen, the ebullient Buddhist Movement—almost a Reformation in some aspects—carried everything before it, and State after State in Āryāvarta[2] discarded the ancient religion. The *dhammaghosa*[3] proclaimed its triumph to Eastern Asia in no uncertain language.

But piteous wails from the burning hamlets of Kaliṅga perhaps reached the imperial ears. The mighty sword, forged so well by the conqueror of the Greeks and his son, fell clattering down from the nerveless fingers of Aśoka. No heroic Maurya apparently picked it up ever again. As the lustre of the sword grew dimmer and dimmer, the day of the decline of the vast empire perhaps drew nearer and nearer.

Hinduism had declined. It had probably sunk into the religion of a minority. But like the majestic Catholic Church in a later age, Hinduism rallied its dispersed forces, and the Hindu Counter-Reformation soon commenced its onward march. This movement was accompanied by the Hindu Renaissance, the results of which affect the life of the Hindu even to-day.

The Hindu Revival began early. It may perhaps be traced back (at least) to the days of the Suṅga who slew the horse on the famous sacrificial altar. Whenever it might have begun, it reached its zenith during the period which commenced in the fourth century A.C., and ended in about the tenth. This era was marked by changes which were catastrophic. The progress of the Hindu in every sphere of life was almost phenomenal.

This age was heralded by the chants of priests who assisted in the performance of the four *aśvamedhas* (horse-sacrifices) of the Vākāṭakas,

[1] Prof. De: *Kālidāsa and Vikramāditya*, p. 180.

[2] It may be equated more or less to North India during this period. The use of the word "Āryāvarta" in l.21 of the *Corpus Inscriptionum Indicarum*, Vol. III, (No. i), e.g., may be noticed.

[3] A word of the Aśokan era.

soon to be connected matrimonially with the Guptas, the ten sacrifices of the Bhāraśivas who "were besprinkled on the forehead with the pure water of the Bhāgīrathī obtained by prowess,[1] the "long discontinued horse-sacrifice" of the great Gupta,[2] the *yajñas* (sacrifices) of the Traikūṭa Dharasena,[3] and of the Emperor Kumāragupta I.[4] It witnessed the establishment of a vast empire over which the Hindu Imperial 'Eagle'—the Gupta *Garuḍa*—flew triumphantly, the very probable publication of Kālidāsa's *kāvyas* (poems) and *nāṭakas* (dramas), the development of the science of astronomy by Āryabhaṭṭa, Varāhamihira, and Brahmagupta, the birth probably of the *Mudrārākshasa*, and of the *Yājñavalkya* and *Nārada Smṛitis*, the execution of the world-famous frescoes, the ingenious adaptation of the idea of the colossus in sculpture, the deliberate and wide use of classical Sanskrit—the sacred language of Hinduism—in the royal and private lithic and other records, the linking up of Eastern Asia by shipping lines, the growth of cultural and commercial contacts leading to the formation and consolidation of a Greater India, and the rapid evolution of political conceptions influencing and being influenced by the growing political practice.

One of the most important sources of our knowledge of the political practice of the period, and of the reaction of the revived Hinduism on it, is epigraphic. These inscriptions, mainly *śāsanas* (edicts) and *praśastis* (panegyrics), are engraved on stone, copper, pottery[5] and iron.[6]

The persons in whom the right to rule was vested, during this age, may be broadly placed under two classes. There were the *Janendras*, *Mahārājas*, *Mahāsenāpatis*, probably *Senāpatis*, and others who were connected with the administration of the various *gaṇas* (groups)—the Mālavas, Kākas, Kharaparikas, Sanakānīkas, Ārjunāyanas, Prārjunas, Yaudheyas, probably the Maitrakas, Mādrakas, Ābhīras, Lichchhavis, and others. The second class comprises the rulers of monarchical States. They again may be divided into two categories. The *Mahārājādhirājas*, *Rājādhirājas*, *Rājarājādhirājas*, *Ekādhirājas*, etc. belong to the first class. In the second order, we are to group the *Rājānakas*, *Rājans*,

[1] *C.I.I.* Vol. III, p. 236, ll. 2-3. The Bhāraśivas probably became a North Indian power. *C.I.I.* Vol. III, p. 237, ll. 6-7.

[2] E.g. pp. 26 and 27, ll. 4-5. The inscription on the Lucknow Museum Horse; *Catalogue of Indian Coins* (Guptas), p. lxxvi; p. 21; Pl. V, nos. 9-14.

[3] *Jour. Bom. Br. Roy. Asi. Soc.* Vol. XVI, p. 347, Pl. I, ll. 1-2.

[4] One of the types of his coins (*C.I.C.*, pp. 61-115) is the *aśvamedha* one.

[5] E.g. *Ind. Ant.* Vol. XIV, p. 75. [6] E.g. *C.I.I.* Vol. III, no. xxxii.

Mahārājas, Sāmantas, Mahāsāmantas Mahāsāmantādhipatis and others. These monarchical rulers of the second category possessed considerable authority over their subjects and rear vassals. But they were not independent. It is therefore difficult for me to assert that sovereignty, as it figures in the epigraphic conceptions of the period, " *est* " in all the monarchical States, " *summa in cives ac subbitos legibusque soluta potestas.*"[1] But if we leave for the moment the claims of pluralism aside, we may almost say, along with the other John,[2] that the *Mahārājādhirāja* and his peers were " determinate human "[3] superior, " not in a habit of obedience to a like superior," receiving " habitual obedience from the bulk of a given society," and thus " sovereign." They were in the language of the epigrapher Vasula, the son of Kakka,[4] persons "whose heads had never been brought into the humility of obeisance to any other except the gods they adored." They were monarchs " by whose prowess the forehead of many a Mihirakula[5] was pained through being bent low down in (the act of making) obeisance." To the " two feet " of a ruler of this category, " respect was paid with complimentary presents of the flowers from locks of hair on tops of their heads " by various other potentates.

Cases occur of the association of titles significant of subordination with independent rulers of the first rank. Thus Samudragupta is very probably called only a *Bhaṭṭāraka* in an inscription, and simply a *Rājan* on the Tiger Type of coins.[6] Chandragupta II is called a *Mahārāja* on some coins, and Kumāragupta I, a *Mahārāja* in a stone inscription.[7] Mahārāja Varāhasiṁha is mentioned as a *Praṇetṛi*[8] of Rājā Śrīmān Aparājita of the Guhila *Anvaya.*[9] But the weight of evidence probably justifies one in supposing that the *Rājānakas*, *Rājans* and others, at least during the earlier part of the period under review, signify subordination to the *Mahārājādhirāja* and his peers. On the whole, these divisions in the hierarchy of rulers make it almost certain that sovereignty, as the epigrapher thought of it, involved two propositions: that of ruling directly over subjects, and of exercising paramount authority over *de facto* rulers—the *Rājānakas, Sāmantas, Mahārājas* and others—in certain ways, and under certain circumstances. It is of course conceivable that

[1] Jean Bodin. [2] John Austin. [3] Clothed in a semi-divine garb.
[4] *C.I.I.* Vol. III, p. 147, l. 9. [5] The Hūṇa king Mihirakula; l. 6.
[6] *C.I.I.* Vol. III. no. I, l. 31; *C.I.C.*, p. 17. [7] *C.I.C.* Vol. III, p. 47, l. 2.
[8] The commander-in-chief of his forces? [9] Dynasty, *Epi. Ind.*, Vol. IV, pp. 31-32.

the nature of direct imperial rule over the home provinces, for example, would differ from that of the *Mahārāja's* personal rule over the whole (or part of) his principality, because it is unrestrained in the first case, and theoretically not so, in the second.

Hinduism affected the conceptions underlying the political practice of the period beginning in the fourth century A.C. in diverse ways. Though it is very difficult to ascertain with accuracy the extent of the change which directly resulted from the Religious Revival, and was not derived from earlier days, a general survey of the nature of these conceptions is possible. I have dwelt elsewhere on the attitude of the Hindu State towards Buddhism, Jainism, the ninety-six "heretical" sects, and the Devadattans who "made offerings to the three previous Buddhas, but not to Śākyamuni Buddha."[1] The study of the nature of political obligation, in general, is also interesting. There are reasons for believing that *dharma* (religion) during this period was emphatically the "business" of the State in the Aristotelian political sense. According to the Junagadh Rock Inscription,[2] one of the duties of the ruler of the period was to see that while he reigned, "verily no man among his subjects should fall away from *dharma*."

Another effect of the reaction of *dharma* on the conceptions underlying the North Indian political practice of the era (as recorded in various inscriptions) lay in the evolution of the idea of the embodiment of sovereignty in a resplendent and majestic lady of a semi-divine character. To elucidate this evolution, an attempt must, first of all, be made to illustrate the various uses of the word *Śrī*, *Lakshmī*, *Kamalā* and *Padmā* in the inscriptions.

Firstly, many passages describe the Lady as the Consort of Vishṇu in the strictly (Hindu) scriptural (*śāstrīya*) sense, thus proving, if proof is needed at all, that the epigrapher was quite familiar with the status and qualities which could be predicated of the goddess. Thus we find the epigrapher (*c.* fifth century) saying, "Victorious is he, (the god) Vishṇu, the perpetual abode of (the goddess) Lakshmī whose dwelling is the water-lily, the conqueror of distress, the completely victorious one."[3] In a passage occurring in the Sarnath Stone[4] of the end of the seventh century, Lakshmī is said to be the consort of Kṛishṇa in the same way

[1] My article in the *Jour. As. Soc. Beng.*, New Series, Vol. XXVI, pp. 401-409.
[2] *C.I.I.* Vol. III, no. xiv, l. 5. [3] No. xiv, ll. 1-2. [4] P. 285, l. 4.

as Rohiṇī is the wife of the moon, and Gaurī of Śiva. The Ujjayini Plates refer to Lakshmī, Rādhā and Śesha of "the thousand hoods" in connection with remarks on Murāri.[1] In the Aphsad Stone,[2] "the feet of (the god) Mādhava" are said to be "graced by the attention of (the goddess) Śrī." The same inscription also contains the passage, "As long as the digit of the moon (remains) on the head of (the god) Hara, and (the goddess) Śrī on the breast of Vishṇu."[3] In almost the same words, a passage of the Hindol Plate of the eighth century conveys the same idea. Lakshmī is there said to reside in (rest on) the breast of the enemy of Madhu (Nārāyaṇa).[4] The Kota Inscription[5] of the same century refers to "Gaurī of the three-eyed god and Lakshmī of Kṛishṇa." Even as late as the eleventh and twelfth centuries, we find a similar reference to Śrī.[6]

Secondly, *Lakshmī*, *Śrī*, *Kamalā* and *Padmā*, either by themselves or as parts of compound words, are used in many passages in direct relation to ruling potentates. It seems to have been the custom heretofore to confuse the first and second epigraphic uses, and as a consequence scholars of standing like Fleet, Kielhorn, Gupte and Bühler have misinterpreted these inscriptional texts. The passage of the Junagadh Rock which speaks of Lakshmī as having her permanent abode in Vishṇu is immediately followed by: "And next victorious for ever is the supreme king of rulers over princes, whose breast is embraced by Śrī." Three lines later, we find that the emperor is said to be a person whom "Lakshmī of her own accord selected as her husband, having in succession (and) with judgement skilfully taken into consideration and thought over all the causes of virtues and faults, (and) having discarded all (the other) sons of rulers (as not coming up to her standard)." Fleet translates "*Śrī*" in the passage by "the goddess of wealth and splendour," and "*Lakshmī*" by "the goddess of fortune and splendour." The Aphsad Stone[7] says: Ādityasena's "very great fame, white as the orb of the autumn moon, and conferring renown on the whole circle of the world, was for a long time made angry by him. The

[1] *Ind. Ant.* Vol. XIV, p. 160. [2] *C.I.I.* Vol. III, p. 203, ll. 11-12.

[3] P. 204, l. 26. [4] *Jour. B. & O. Res. Soc.* Vol. XVI, p. 79, l. 30 *et seq.*

[5] *I.A.* Vol. XIV., pp. 45-46.

[6] *I.A.* Vol. XVIII, p. 11, p. 15, etc., p. 129; in the Benares College and Bengal Asiatic Society Grants, etc.

[7] *Kāṁkshayā* in the passage is in the instrumental case, because it denotes a reason which is the desire. Fleet translates by "(her) association with (his) wealth." It should be, I think, "(his) association with Lakshmī." It will then fit in, e.g., with *sāpatnyavaira*.

reason was that the king had desired association with Lakshmī. Kīrtti showed the enmity natural to the condition of rival wives." A passage of the Ragholi Plates of *c.* the eighth century[1] conveys the same idea thus: "Lakshmī embraced Mahārājādhirāja Parameśvara Jayavarddhanadeva[2] so closely, that the goddess of Fame, as if (jealous of her co-wife), out of anger, ascended to the heavens." The editor translates *Lakshmī* by "the goddess of wealth." The "slender body" of the Maitraka ruler Kharagraha is said to be "embraced by Lakshmī herself in a very public fashion." Mahārājādhirāja Śilāditya's "breast dallied with the embraces of Śrī."[3] Fleet renders *Lakshmī* and *Śrī* by "goddess of fortune." Bhoja, says the Gwalior Praśasti[4] of the ninth century, was "embraced by Lakshmī. Lakshmī who belonged to another (Devapāla) became properly his *punarbhū* (remarried wife)." In the Pathari Pillar Inscription of the second half of the ninth century,[5] we find Jejja called *Lakshmīsanātha*. Kielhorn translates the compound word by "endowed with fortune." The Haddala Plate[6] of the early tenth century says that Mahāsāmantādhipati Dharaṇivarāha was *Padmāvapushyabhirata*—"found happiness in the embraces of Padmā." Mahārājādhirāja Mūlarājadeva is said to be the abode of Kamalā, *Kamalāśrayaḥ*.[7]

In addition to this use of *Lakshmī* in relation to individual rulers, we must also notice a similar use relative to corporations. Thus, in an inscription[8] of about the fifth century, "the family of the best of kings belonging to the Gupta lineage, ocean of virtuous qualities, is said to be attached to Śrī." The Lakshmī of the Imperial House is again referred to in an inscription[9] of the early seventh century, where Kṛishṇarāja is said to be "the awakening moon to the Lakshmī of the dynasty which was like a bed of lotuses."[10] In the Alina Plates of the same century we find this expression, "the Lakshmī of the compact ranks of (his) enemies."[11] Almost the same idea is expressed by *arātilakshmī* in a passage of the Hindol Plate.[12]

In interpreting these passages in which *Lakshmī* in the second sense is used, one must bear in mind that many of these inscriptions begin with

[1] *E.I.* Vol. IX, p. 45, l. 18 *et seq.*
[2] I spell the name as it actually occurs in the record.
[3] *C.I.I.* Vol. III, no. xxxix, l. 40; l. 55.
[4] *E.I.* Vol. XVIII, pp. 107-110.
[5] *E.I.* Vol. IX, pp. 252-255.
[6] *I.A.* Vol. XII, pp. 193-194.
[7] *I.A.* Vol. VI, p. 191, ll. 1-2.
[8] *C.I.I.* Vol. III, p. 258, l. 1.
[9] No. xiii, l. 10.
[10] *E.I.* Vol. XII, p. 33, ll. 4-5.
[11] *C.I.I.* Vol. III, no. xxxix, ll. 9-10.
[12] *J.B.O.R.S.* XVI, p. 79, l. 30, etc.

"*oṁ svasti*," and that some of them record grants accompanied by libations of water (*udakātisargeṇa*) to Brāhmaṇas and Hindu gods, with the avowed purpose of acquiring religious merit for rulers living and dead. Secondly, Jayavarddhana, Kharagraha, Śilāditya, Dharasena ond Buddharāja, for example, took pride in describing themselves as *paramamāheśvara*, devout worshipper of Śiva. Kṛishṇarāja, the grandfather of Buddharāja, is said to be "solely devoted to Paśupati from his birth." Dharaṇivarāha's inscription, for example, begins with an invocation of Dhandheśvara—a special name of Śiva. Mūlarāja is said to have bathed "in the water of the Eastern Sarasvatī on the day of an eclipse of the sun, and worshipped the lord of the gods, the deity of the Rudramahālaya." He was a devotee of Mūlanāthadeva. Śiva, we may point out, is, along with Vishṇu, a member of the Hindu Trinity. Kharagraha is called *Dharmāditya* (the sun of religion). Thirdly, that the composer of the Pathari Pillar Inscription definitely intended to employ a pun is apparent from the use of the word *mahīdhara* in the same line. *Mahīdhara* means a mountain. But the composer desires that it should also signify a king. It mày also be pointed out that a direct and near descendant of Jejja built a temple of Vishṇu. It will therefore be *prima facie* impossible for these rulers to encourage their descriptions (by their epigraphers), as the husbands of Vishṇu's Consort. Fifthly, no epigrapher would have mentioned that Vishṇu's wife was the queen of Mahārājādhirāja Ādityasena, by whom "the best of temples was caused to be made for the sake of (the god) Vishṇu;" or of Bhoja who "erected a house within his seraglio compound in the name of" Vishṇu.[1] Lastly, no composer of Skandagupta, for example, would have dared to assert that the Consort of Vishṇu "of her own accord" selected the monarch as her husband and embraced the "breast" of a Rājarājādhirāja who declared himself very probably as a devout worshipper of Vishṇu in (e.g.) the Bihar Stone and certainly as one in the *Garuḍa* and Altar silver coins, and whose Bhitari Pillar mentions that he erected an image of Vishṇu.[2] It must also be noticed that the verse which associates the Gupta with *Śrī* in the Junagadh Inscription follows (and does not precede) the lines composed in honour of Vishṇu, and that the composer begins it with *tadanu* ("and next").

[1] *E.I.* XVIII, p. 110, l. 16.

[2] *C.I.I.* Vol. III, no. xii, l. 23; no. xiii; *C.I.C.*, pp. ci-cii; p. 89 and e.g. Pl. XVI nos. 1 to 17.

Moreover *Lakshmī* and *Śrī* are also found as components of words like *rājaśrī*, *rājyaśrī*, *rājalakshmī* and *pārthivaśrī*. For instance, the Eran Stone Pillar and Boar Inscriptions of the fifth century say that Mātṛivishṇu was "approached (in marriage choice) by Rājalakshmī, as if by a maiden choosing him of her own accord (to be her husband)."[1] The Bodh-Gaya Inscription contains *Rājyaśrīyam*.[2] The Vadner Plates[3] say that Śaṅkaragaṇa "gained Rājaśrī by the prowess of his own arm." Mr. Gupte translates even *Rājaśrī* by "prosperity of a king." The word *rājyaśrī* occurs in a seventh century Maitraka grant[4] (e.g.), and in another inscription of the same House, belonging to the eighth century.[5] Dhruvasena is said to have "accepted in marriage *Rājyaśrī*, just as if she were longing to choose (him) of her own accord, from the assemblage of rulers, full of affection (for him), (and) wearing fine garments that were (their) resplendent reputation, which offered (her to him)." Another scion of the same House is said to carry "on (his) shoulder *Rājalakshmī*,[6] even while she was still an object to be longed for by (his) elder (brother)." It is also mentioned that "like a young lordly lion adorning a forest on a mountain, Mahārājādhirāja Śilādityadeva adorned *Rājalakshmī*."[7] Dharasena is said to have been "possessed of a spotless *pārthivaśrī* acquired by (his) prowess."[8] Many Maitraka records also refer to *rājyaśrī* of Droṇasiṁha being "purified by the great liberality" of that monarch.[9] Mahlaṇa of the Chhindas is said to have gained great *rājalakshmī*.[10] Bühler translates this word by "royal fortune." The formation of these compounds and the contexts in which they occur make it certain that this Lady is not identical with Vishṇu's Consort. That such a conception of sovereign power existed at all, raises a presumption that *Śrī*, *Lakshmī*, *Kamalā* or *Padmā*, when used in what I have conveniently called the second epigraphic sense, is synonymous with this personification. Secondly, the *pṛithuśrī* spoken of Skandagupta[11] corresponds to *Rājalakshmī* of Mahlaṇa, for example. Thirdly, the (connected) *Lakshmī* of the Junagadh Rock Inscription behaves in relation to Skandagupta in the same way as the *Rājalakshmī*, for instance, towards Mātṛivishṇu.

[1] *C.I.I.* Vol. III, no. xix, ll. 6-7; no. xxxvi, l. 5.
[2] P. 276, l. 6. [3] *E.I.* Vol. XII, pp. 33-35.
[4] *I.A.* Vol. XI, p. 308, l. 4. [5] *C.I.I.* Vol. III, no. xxxix, ll. 33-36.
[6] Ll. 14-15. [7] L. 49. [8] L. 10. [9] L. 2; no. xxxviii, l. 6.
[10] *E.I.* Vol. I, p. 78, l. 9. [11] *C.I.I.* Vol. III, no. xiv, l. 3.

Lastly, the effigy of Lakshmī appears on various seals and coins. I have shown elsewhere[1] that it is reasonable to suppose that the Marriage Type of coins "were minted during the reign of Samudragupta." I am also of opinion that (the Spear Type of Smith and) the Standard Type of Allan should be called the Sceptre Type, chiefly because of the absence of a piece (or pieces) of cloth usually found attached to a banner. These types as well as the Archer, Battle-Axe, Kācha and Lyrist varieties bear the figure of Lakshmī on them.[2] Lakshmī is found seated on a throne with a high back[3] or without back at all[4] in the Throne Reverse, and on a lotus, as if on a *yogāsana*, (e.g. Pl. VI, nos. 10 to 18, and Pl. VII, nos. 1 to 19) in the Lotus Reverse types, e.g. of Chandragupta II. In most of these, her left hand rests on her hip. The position of the hands in some seems to justify a sub-division. In Pl. VII, no. 5, for example, her left arm is slightly extended. On nearly all types of Kumāragupta I,[5] the Lady appears. In the Pratapa Type, e.g., she holds a lotus in her raised right hand, and sits (facing) the lotus. She is found probably on the (so-called) King and Queen Type, e.g. of Skandagupta. The Archer Type of Kumāragupta II are apparently copies of that of Kumāragupta I. We find probably "the traces of an upright female figure, apparently Lakshmī, with either one or two elephants performing the *kumbhābhisheka* (pouring water from a pitcher) over her," in a seal of Mahārājādhirāja Jayanāgadeva belonging to the sixth century.[6] Lakshmī with elephants pouring water over her is found also on the seals of Mahājayarāja and Mahāsudevarāja.[7] Similarly, a seal attached to the Tipperah Plate[8] of the middle of the seventh century "bears in relief a figure of Lakshmī standing on a lotus with two elephants on two sides, sprinkling her with water." There is a full-blown lotus on the reverse. "Two attendant figures seated cross-legged at the two sides of Lakshmī are in the posture of pouring out something liquid from two round pots."

One notices that Lakshmī holds the cornucopiæ in many of Samudragupta's coins. At the same time, the traces of the back of a throne, and probably the dress in which the emperor appears on some of the coins, show the strength of Kushāṇa influence. It has been suggested that the goddess Ardochso was the model from which the Lakshmī was copied. As time went on, the cornucopiæ gave place to a lotus. If we identify this *Lakshmī* with Vishṇu's Consort, it is hard to explain her association

[1] *Lucknow Univ. Jour.*, 1925.
[2] E.g. *C.I.C.* pp. 1-23, and Pls. I-V.
[3] As in Pl. VI, nos. i-vi.
[4] Pl. VI, no. vii.
[5] Pp. 61-115.
[6] *E.I.* Vol. XVIII, p. 63.
[7] *C.I.I.* Vol. III, pp. 193-194; pp. 197-199.
[8] *E.I.* Vol. XV, pp. 306-309.

with the cornucopiæ in the earlier stages. It is not possible to suppose that the designer of the Early Gupta Period was ignorant of the usual equipments of one of the principal Hindu goddesses.[1] But if we take this Lakshmī to be the Spirit of Sovereignty, a sensible explanation becomes possible. It may be suggested that when the Indian feeling became intensified, the Spirit became divested of her foreign trappings, and invested with those borrowed from the well-known goddess of Hinduism. That foreign figures were borrowed by Gupta designers is supported by the probable presence of Minerva on some coins of Kumāragupta I.

I may therefore conclude that *Lakshmī*, *Kamalā*, *Śrī* or *Padmā*, when used by the composers of inscriptions in direct relationship to the ruling potentates of the period under review, (other things being equal),[2] is probably identical with the Spirit of Sovereignty. Secondly, this is certainly so, when such relationship is described to be a marital one. Thirdly, *Rājalakshmī*, *Rājaśrī*, *Rājyaśrī*, *Pārthivaśrī*, etc. are identical with this Spirit, and not with Vishṇu's Consort. Fourthly, though the conception of this personification of the right to rule, the parent of the political obligation of the era, was deeply indebted to the familiar *śāstrīya* (Hindu scriptural) notion of Vishṇu's Consort, other forces also seem to have influenced its evolution. Fifthly, this personification has its epigraphic parallel, e.g. in Kīrtti, a parallel which we have noticed above.

[1] Expressions like "*Lakshmīrvakshasthale vā vasati Madhuriporyāvadambhojahastā*" show that the epigrapher of the period was aware of the association of the lotus with the hand of Vishṇu's Consort (*J.B.O.R.S.* XVI, pp. 77-80).

[2] The context, for example, may not allow it. *Śrī* also, as is well known, precedes names of rulers. We may notice, for instance, "Śrīsarasvatyorekādhivāsasya" referring to Dharasena of the Maitraka House (*C.I.I.* Vol. III, no. xxxix, l. 9).

HINDU POLITICS

1. THE DOCTRINE OF MATSYA-NYAYA (THE LOGIC OF THE FISH)

At the back of political thinking in India there was the process of dichotomy at work. Hindu thinkers tried to understand the state by differentiating it from the non-state. Their method was logical as well as historical. That is, in the first place, they tried to investigate in what particulars the state analytically differs from the non-state; and in the second place, they tried to picture to themselves as to how the pre-statal condition developed into the statal, *i.e.* how the state grew out of the non-state. The chief solution of both these problems they found in the doctrine of *mātsya-nyāya* or the logic of the fish.

What, now, is the non-state according to Hindus? The same question was asked by the philosophers of Europe thus: "What is the state of nature?" And the Hindu answer was identical with the European.

According to Hooker (1554-1600) in the *Ecclesiastical Polity* the state of nature is a state of strife. The *Leviathan* of Hobbes (1588-1670) declares similarly that the state of nature is a state of war and of no rights. In Spinoza's (1632-77) opinion also, in the *Tractatus Theologico Politicus*, the state of nature is a state of war and a state of the right of might. The non-state is thus conceived to be a war of "all against all," an "anarchy of birds and beasts," or a regime of vultures and harpies, as John Stuart Mill would have remarked.

It is interesting to observe that in China also the state of nature was analyzed by Moh-Ti (*c.* 500-420 B.C.) in almost selfsame terms. In the non-state, as Su Hu explains it in *The Development of Logic in Ancient China*, "each man has his own notion of right. Therefore one man has one notion of right, two men have two notions of right, and ten men have ten notions of right. The more men there are, the more conceptions of right will there be. Consequently each approves his own notion of right and denounces every other man's. So they denounce one another."

This Hobbesian "law of beasts and birds" or the *Naturprozess* of Gumplowicz is the logic (*nyāya*) of the fish (*matsya*) in India.[1] Should

[1] The history of the theory of *mātsya-nyāya* in European sociology from Heracleitus to Gumplowicz may be seen in Barnes's article on "The Struggle of Races and Social Groups" in the *Journal of Race Development* (U.S.A., April, 1919), pp. 394-400. For Protagoras's conception of the origin of the state after primeval chaos *vide* Barker's *Plato* (London, 1918), p. 130.

there be no ruler to wield punishment on earth, says the *Mahābhārata* (*Śānti*, LXVII. 16-17; LXVIII. 11-12), "the strong would devour the weak like fishes in water. It is related that in the days of yore people were ruined through sovereignlessness, devouring one another like the stronger fishes preying upon the feebler." In the *Manu Saṁhitā* (VII. 20) likewise we are told that "the strong would devour the weak like fishes" if there be a virtual reversion to the non-state (if, for example, the king is not vigilant enough in meting out punishments to those that should be punished). The *Rāmāyaṇa* (*Ayodhyā*, LXVII. 31) also describes the non-state region as one in which "people ever devour one another like fishes." And a few details about the conditions in this non-state are furnished in the *Matsya Purāṇa* (CCXXV. 9). "The child, the old, the sick, the ascetic, the priest, the woman and the widow would be preyed upon," as we read, "according to the logic of the fish" (should *daṇḍa* or punishment fail to be operative at the proper time).

The idea of the fish-like struggle for existence or self-assertion was thus a generally accepted notion in the "floating literature" of Hindustan. It found an important place in the exclusively political treatises also. It was exploited as early as the latter half of the fourth century B.C. by Kauṭalya,[1] one of the first among the historical names in political science. According to him in the *Artha-śāstra* (I. 4) the logic of the fish prevails while the state is unformed. "In the absence of the wielder of punishment the powerful swallows the powerless." And Kāmandaka also, who several centuries later (*c*. 500 A.C.) generally follows Kauṭalya, writes in his *Nītisāra* (Digest of Politics), II. 40, that in the absence of punishment (*daṇḍa*) the destructive or ruinous logic of the fish operates through mutual animosities of the people and leads to the disruption of the world.

Nor was the doctrine confined within the circle of academicians and theorizers. We find it prevalent even among diplomatists and practical statesmen, e.g. of the ninth century. In the declarations of the Bengali Emperor Dharmapāla[2] we are informed that his illustrious dynasty owed its origin to an "election" by the people. We are told further that it was "in order to escape from the logic of the fish," *i.e.* in order to escape from being absorbed into another kingdom, or to avoid being

[1] *Re* date and personality see "Kauṭalya and His Boswell" by the present author in the *Calcutta Review* (August, 1935).

[2] R. D. Banerji, *Bānglār Itihāsa* (History of Bengal), Calcutta (1915), Vol. I., pp. 147-149.

swallowed like a fish that the people of Bengal " made his father Gopāla accept the sovereignty." The mediæval Hindu monarch was here using almost the same metaphor as has been employed in the nineteenth century by J. S. Mill in his essay on *Liberty* when he explains how " in order to prevent the weaker members of the community from being preyed upon by innumerable vultures, it was needful that there should be an animal of prey stronger than the rest, commissioned to keep them down."

This theory of the non-state or the state of nature has had important bearings on other doctrines of Hindu political philosophy. For the present we have only to note that in India political speculation was not divorced from the general intellectual currents in the society. The political philosophers kept abreast of the contemporary scientific thought in other branches of inquiry. The logical apparatus and dialectical machinery used in political discussions were familiar instruments in the cultural *milieu* of the scientific world.

Mātsya-nyāya, for instance, is an expressive technical term in India's legal phraseology. In Raghunātha's (fifteenth century) *Laukika-Nyāya-Saṁgraha*[1] (Compilation of Popular Legal Maxims) we find the " logic of the fish " coupled with the " logic of the monsters." The logic of the monsters is known as *Śundopaśunda-nyāya*. Śunda and Upaśunda are two monster brothers, like Pyrochles and Cymochles in Spenser's *Faerie Queene*. They are said to have quarrelled over the nymph Tilottamā and destroyed each other in the contest. Thus when two contradictory facts are equally strong, they neutralize each other. But when they are of unequal strength, *i.e.* when one can overpower the other, there is generated a field for the operation of the logic of the fish and the survival of the fitter.

The logic of the fish arises, as Raghunātha explains it, under a double set of conditions. First, there must have to be a conflict between a powerful and a comparatively powerless unit. And secondly, the latter must have been crushed and obliterated by the former. It is frequently referred to, says he, in the Itihāsas (treatises on history) and the Purāṇas, and he quotes the following passage from Vasishṭha[2]: " By this time that *Rasātala* region had become extremely sovereignless, *i.e.* an anarchic non-state, characterized by the ignoble logic of the fish." Vasishṭha's

[1] K. L. Sarkar: *Rules of Interpretation in Hindu Law*, Lecture VI.

[2] Cited in A. K. Maitra's *Gauḍa-lekha-mālā* (Inscriptions of the Bengali Imperial Dynasty), in Bengali, p. 19.

verse is elucidated by Raghunātha with the gloss that " strong fishes began to make an end of the weaker ones."

The non-state is then a state of anarchy, one in which the " tyranny of robbers " has full play, " justice is non-existent " and the " people prey upon one another." It is " the greatest evil " (*Mahā., Śānti,* LXVII. 1-3, 12-15). " Enjoyment of wealth and wives is impossible " under it. Only the robber is then happy. Even his happiness is precarious, because " the one is deprived of his loot by two, the two are robbed of theirs by several combined." " A free man is made a slave " and " women are assaulted."

The psychology of men in the state of nature is brought out in the Book on *Śānti* (Peace), LIX. 15-12, of the *Mahābhārata* according to the following causal nexus: " Then foolishness or stupidity (*moha*) seized their minds. Their intelligence being thus eclipsed, the sense of justice (*dharma*) was lost. Cupidity or temptation (*lobha*) overpowered them next. Thus arose the desire (*kāma*) for possessing things not yet possessed. And this led to their being subjugated by an affection (*rāga*) under which they began to ignore the distinction between what should and what should not be done. Consequently there appeared sexual license, libertinism in speech and diet, and indifference to morals. When such a revolution set in among men, Brahman (the idea of Godhead) disappeared, and with it, law (*dharma*)."

It is thus with the negation of morals and manners, the nullification of property, the very antithesis of law and justice, that the non-state is identified. And this appears to have been the fundamental position of Hindu theorists on the state. From this negative analysis it requires but a logical " conversion " according to the law of " contraries " to establish positively the philosophy of the state. To this we shall now address ourselves.

2. THE DOCTRINE OF DAṆḌA (PUNISHMENT, COERCION, SANCTION)

Two " inseparable accidents " of the Hindu theory of the state are, first, the doctrine of *mamatva* (" mine "-ness) or *svatva* (*suum*), *i.e.* " one's own "-ness, *proprium*, *Eigentum* or property, and secondly, the doctrine of *dharma* (*i.e.* law, justice and duty). And behind them both lies the doctrine of *daṇḍa* (punishment, restraint, or sanction). Herein is to be sought the nucleus of the whole philosophy of sovereignty.

A state is a state, argue Hindu philosophers, because it can coerce, restrain, compel. Eliminate control or the coercive element from social

i.e. organized life (*samūha*), and the state as an entity vanishes. *Daṇḍa* is *überhaupt*, the very essence of statal relations. No *daṇḍa*, no state. A *daṇḍa*-less, *i.e.* sanctionless state is a contradiction in terms.

We have noticed above that the absence of *daṇḍa* is tantamount to *mātsya-nyāya* or the state of nature. It is clear also that property and *dharma* do not exist in that non-state. These entities can have their roots only in the state. The theory thus consists of two formulæ:

I. No *daṇḍa*, no state;
II. (*a*) No state, no *dharma*, and
(*b*) No state, no property.

What, then, is the *rationale* of this *daṇḍa*?[1] What is it that makes coercion the *sine qua non* of the state? Why is it that the very idea of government should imply a restraint, a check, a control, a sanction? In Hindu political philosophy the answer to these questions is to be found in the "original nature of man."

The phenomena of government are founded on the data of human psychology. And in regard to them the general trend of thought all the world over seems to have been the same. In ancient China Hsun Tze (B.C. 305-235?) strongly condemned the doctrine of Mencius (B.C. 373-289) who had postulated the "original goodness" of human nature. For, according to his counter-theory (Book XXIII) "man is by nature wicked, his goodness is the result of nurture." "A curved twig," to cite again from Su Hu's work (VI. iii), needs straightening and heating and bending in order to become straight...And man who is by nature wicked needs teaching and discipline in order to be right and requires the influence of *Li* and *Yi* (*Sittlichkeit*) in order to be good. The ancient rulers understood the native viciousness of man,...and therefore created morals, laws and institutions in order that human instincts and impulses might be disciplined and transformed."

Let us now turn to the Western world. Seneca, the Stoic philosopher of the first century A.C., "looked upon the institutions of society as being the results of vice, of the corruption of human nature. They are conventional institutions made necessary by the actual defects of human nature." The philosophical "anarchists" of modern times will not, however, accept this doctrine. Men indeed had known a previous period of innocence; but after a time, according to this Roman thinker, they became avaricious. "Avarice rent the first happy society asunder.

[1] In regard to *daṇḍa* see the section on the "Psychological Premises of Hindu Politics" in my *Positive Background of Hindu Sociology* (Allahabad, 1921) Vol. II., pp. 31-34.

It resulted that even those who were made wealthy became poor, for desiring to possess things for their own, they ceased to possess all things. The rulers grew dissatisfied with their paternal rule; the lust of authority siezed upon them."[1]

This doctrine of human depravity and the natural wickedness of man was entertained by the Church Fathers also. St. Irenæus (second century A.C.) in discussing the causes which have made government necessary holds the view that "men departed from God and hated their fellowmen, and fell into confusion and disorder of every kind; and so God set men over each other imposing the fear of man upon man, and subjecting men to the authority of men, that by this means they might be compelled to some measure of righteousness and just dealing."

The idea that "the institution of government was made necessary by sin and is a divinely appointed remedy for sin" was continued and developed by St. Augustine and St. Gregory the Great. It was "emphatically restated by the ecclesiastical and political writers" of the period from the ninth to the thirteenth century and found a champion in Pope Hildebrand, Gregory VII (1073-1085).[2]

The verdict of Hindu thinkers on the nature of man is identical. According to Kāmandaka (II. 42), men are by nature subject to passions and are covetous of one another's wealth and wife. "Rare," says Manu (VII. 21-24), "is the man pure or sinless" (by nature). The lower ones tend to usurp the places of the higher. People are prone to interfering with the rights of others and violating morals and manners.

Not that there was no Saturnian golden age of pristine purity and bliss. For, says the *Mahābhārata* (*Śānti*, LIX. 14) anticipating over a millennium the dogmas of Father Lactantius and others, "At first there was neither state nor ruler, neither punishment nor anybody to exercise it. The people used to protect one another through innate righteousness (*dharma*) and sense of justice." But, as among Stoics and Canonists, the "fall" of mankind is accounted for by the Hindus also on the basis of a postulate of sins, loss of true religion, *moha*, stupidity and what not.

On the whole, therefore, it is not a roseate romantic conception of human tendencies and instincts that the *Mahābhārata* offers. The

(1903), pp. 24, 129.

[1] A.J. and R.W. Carlyle: *Mediæval Political Theory in the West* (London), Vol. I.

[2] *Ibid.*, Vol. II., pp. 143-146; Vol. III., pp. 97, 105, 187.

dictum, "spare the rod and spoil the child," proverbial in Western pedagogics, might be dittoed by the Hindu thinkers. For, as we read in the Book on *Śānti* (LXVIII. 18-22), by nature "men tend to overthrow one another. Left to itself the whole world would be in a mess" like a devil's workshop. As a rule, men are used to behaving like the "creatures that cannot see one another when the sun and the moon do not shine," or like the "fishes in the shallow waters," or "birds in places safe from molestation where they can fly at one another's throats in a suicidal strife."

Men, we are told, normally acknowledge only one right and that is the right of might. Those who do not part with their property for the asking run the risk of being killed (LXVIII. 14). Wives, children and food of the weak are liable to be seized perforce by the strong. "Murder, confinement and persecution constitute the eternal lot of the propertied classes." "The very phrase, 'this is mine' (*mamedam*), may be lost from the vocabulary, and *mamatva* or property become extinct,"—an ideal which was being feverishly pursued in the Utopia of Soviet Russia during 1918-21 previous to the inauguration of Lenin's "New Economic Policy" (1922).

The natural tendency of human relations, again, is toward sexual promiscuity (LXVIII. 22). The formation of marriage alliances or of stable societies is not instinctively prompted to man as he is. And if possible, he would shirk even agriculture, commerce, and other means of livelihood, preferring a state of slothful ease and "primrose path of dalliance."

Such is the man natural, or man as Nature made him, in the political anthropology of the *Mahābhārata*. This state of license is the farthest removed not only from a Wordsworthian "Nature's holy plan," but also from the picture of original man governed by a law of "reason" as exhibited in Locke's treatises on *Civil Government*. Nor is it anything but antipodal to the Rousseauesque faith in man's natural impulses and idealization of the "human heart by which we live." Instead, therefore, of postulating with the writer of *Emile* that "all things are good as their Author made them, but everything degenerates in the hands of man," or finding "reason to complain what man has made of man," the Hindu students of political theory set a high premium on the institutions and conventions that make up the artificial thing called civilization. In fact it is to "educate" man out of the deplorable mire of

primitive license and beastly freedom that government has been instituted, say they. The state is designed to correct human vices or restrain them and open out the avenues to a fuller and higher life. And all this is possible only because of *daṇḍa*.

In all discussions of political theory, therefore, the doctrine of *daṇḍa* occupies a foremost place. Some writers have even called their treatises on politics and statecraft *daṇḍa-nīti* (Laws of Sanction, or Science of *daṇḍa*). In the *Manu Saṁhitā* (VII. 14, 23), at any rate, no other category is calculated to command greater attention. For, is not *daṇḍa* "divine, God's own son, the protector of all beings, and as powerful as law itself?" Indeed, it keeps all created beings to their respective duties (*svadharma*), the "virtue" of Plato or the "functions" of Bradley and other neo-Hegelians like Bosanquet and the Italian philosopher Croce,[1] and makes them co-operate to the enjoyment (*bhoga*) or happiness of all mankind. The *division du travail* of which Durkheim speaks is brought about by *daṇḍa* according to Manu. Nay, it is in reality the king, the male (compared with which all other things are female), the manager of affairs, the ruler, the surety for the four orders pursuing their own duties in life. Further, it governs, protects, watches; and last but not least, is identical with law. To crown all, the whole world is rectified by *daṇḍa*, and even the gods and demigods are subject to its authority.

Daṇḍa, as interpreted by Manu, is obviously the very principle of omnipotence, comparable to the *majestas* of Bodin or the *summa potestas* of Grotius. It is the abstraction of that power whose concrete embodiment is *aiśvarya, svāmitva* or sovereignty in a state, which is explained by Figgis as the real "divine right" of kings. It is absolute, with jurisdiction over all, uncontrolled by any entity. To use a very recent category, *daṇḍa* is the most signal feature of *Staatsräson* (reasons of the state), an expression of *Macht politik* and marked by *autolimitazione* (self-limitation) in the sense of Jellinek and Redanò.[2]

A ruler *in office* personifies this *daṇḍa*, but the ruler as a person is subject to it as every other individual is. Hence the inevitable dilemma of kingship in the Hindu theory of the state. It is by wielding this terrible weapon that the king is to preside over and regulate the state.

[1] Carr's *Philosophy of Benedotto Croce* (London, 1917), pp. 127, etc.; Bosanquet's *Some Suggestions in Ethics* (London, 1918), pp. 43-44, 64-65; *Pos. Back*, Vol. II., p. 28.

[2] F. Meinecke: *Die Idee der Staatsräson* (Munich, 1925), pp. 349-354. U. Redanò: *Lo Stato Etico* (Florence, 1927), pp. 207-210.

He is the *daṇḍa-dhara, i.e.* holder or bearer of the instrument of sovereignty, but he is himself liable to be scorched by it, may be one of its first victims, for he is not " infallible."

In Hindu political thought, therefore, *daṇḍa* is a two-handed engine and cuts both ways. On the one hand, it is a terror to the people and is corrective of social abuses. It is a moralizer, purifier, and civilizing agent. As the *Kāmandaki-nīti* (II. 40-42) observes, it is by the administration of *daṇḍa* that the state can be saved from a reversion to the logic of the fish and utter annihilation, as well as the people set right. It is through fear of punishment, according to the *Śukra-nīti* (IV. i, lines 92-102), that people become " virtuous " and refrain from committing aggression or indulging in untruths. *Daṇḍa* is efficacious, moreover, in causing the cruel to become mild, the wicked to give up wickedness, and the garrulous to beware of loquacity. It can subdue even beasts, and of course it frightens the thieves and terrifies the enemies into submission as tributaries, demoralizing all those that are wayward. Nay, it is good also for preceptors and can bring them to their senses, should they happen to be addicted to an extra dose of vanity or unmindful of their own avocations. Finally, it is the foundation of civic life, being the " great stay of all virtues;" and all the " methods and means of statecraft " would be fruitless without a judicious exercise of *daṇḍa*. Its uses as a beneficent agency in social life are, therefore, unequivocally recommended by Śukra.

But, on the other hand, *daṇḍa* is also a most potent instrument of danger to the ruler himself, to the powers that be. For, " uneasy lies the head that wears a crown," in more senses than one. The maladministration of *daṇḍa*, says Kāmandaka, leads to the fall of the ruler. If the ruler is wise enough to manipulate it carefully, as Manu observes, it is surely conducive to the greatest good of the people. But what is the guarantee that the holder of the weapon would not bungle with it and handle it thoughtlessly or arbitrarily? Sould that be the case, the *daṇḍa* would lead to the ruin of the state. And would the office-bearer, the king, get scot-free? By no means. Manu (VII. 28-30) is an advocate of regicide. He does not hesitate to declare that *daṇḍa* would smite the king who deviates from his duty, from his " station in life." It would smite his relatives too together with his castles, territories and possessions. The common weal depends, therefore, on the proper exercise of the *summa potestas*, the *aiśvarya*, the *Staatsräson*.

Daṇḍa thus carries with it its own Nemesis, and we are at once reminded of Mill who says in his *Liberty* that " as the king of the vultures would be no less bent upon preying on the flock than any of the minor harpies, it was indispensable to be in a perpetual attitude of defence against his beak and claws." It is like a bulwark of people's rights as against the ruler that is furnished by the Hindu doctrine of *daṇḍa*, in so far as its efficacy is attributed to the careful handling of it. In the first place, Manu would not allow any ill-disciplined man to be the administrator of the *daṇḍa*. In the second place, the " greatest amount of wisdom," e.g. that accruing from the " help of councillors and others," is held to be the essential pre-condition for the handling of this instrument. And here is available the logical check on the eventual absolutism of the *daṇḍa-dhara* in the Hindu theory of sovereignty.

By the doctrine of *daṇḍa*, then, the state is conceived as a pedagogic institution or moral laboratory, so to speak, not necessarily a Lycurgan barrack, of course. In Redanò's language Manu would say that *lo stato si fa educatore del popolo suo*,[1] *i.e.* the state makes itself the educator of its own people. It is an organization in and through which men's natural vices are purged, and it thereby becomes an effective means to the general uplifting of mankind. It is nothing but *lo stato etico* (the ethical state) that is recognized by Manu. Hindu theorists, therefore, consider the state to be an institution " necessary " to the human race if it is not to grovel in the condition of *mātsya-nyāya*, ruled by the law of beasts. Man, if he is to be man, cannot do without political organization. He must have a state, and must submit to sanction, coercion and punishment, in a word, to *daṇḍa*.

In the two-handed engine of the *daṇḍa*, then, we encounter, on the one side, *Staatsrāson* (interests of the state), and on the other, *Sittlichkeit* (*i.e.* morality, virtue, *dharma*, etc.). The conception of this eternal polarity in societal existence is one of the profoundest contributions of Hindu philosophy to human thought.

3. THE DOCTRINE OF MAMATVA (PROPERTY)

According to the *Mahābhārata*, *Manu Saṁhitā*, *Śukra-nīti* and other texts of Hindu political theory, government is by nature coercive because man is by nature vicious. The state can thus be born only in and through *daṇḍa*, *i.e.* punishment or sanction. It is out of a condition of the " logic of the fish " (*mātsya-nyāya*) or the Hobbesian and Spinozistic

[1] U. Redanò: *Lo Stato Etico* (Florence, 1927), pp. 276-278, 278-282.

"state of nature," that *daṇḍa* brings into existence a well-regulated civil society called the state (*Manu*, VII. 20; *Kauṭalya*, I. iv). In Aristotelian terminology *daṇḍa* would be the "efficient cause" of the state.

What, now, are the marks of the state? How does it declare its existence? What are its functions? In what manner does it make itself felt among the people? In Hindu theory the state, as soon as it crystallizes itself into shape, conjures up, first, *mamatva* ("mine"-ness, *Eigentum, proprium*) or *svatva* (*suum*), *i.e.* property, and secondly, *dharma* (law, *Sittlichkeit*, justice and duty) out of primitive chaos or socioplasmic anarchy. Both these institutions are creations of the state. The state functions by generating them, and people recognize it in its activities fostering their nurture. *Mamatva* and *dharma* are, therefore, two fundamental categories in the political speculation of the Hindus.

According to the *Śāntiparva* (LXVIII. 8-19) of the *Mahābhārata* property does not exist in the non-state (*mātsya-nyāya*), *i.e.* in the condition of men left to the pursuit of their "own sweet will." In the non-state, of course, men can possess or enjoy, but they do not "own." Property, however, is not mere *bhoga*, *i.e.* enjoying or possessing; its essence consists in *mamatva* or *svatva*, *i.e.* ownership. It is "one's own"-ness that underlies the "magic of property." To be able to say *mamedam* (this is mine) about something constitutes the very soul of owning or appropriation.

This proprietary consciousness is created in men for the first time by the state through its sanction, the *daṇḍa*. For it enjoins that vehicles, apparel, ornament, and jewels must be "enjoyed by those to whom they belong," and that one's wife, children, and food "must not be encroached upon by others." And it is only through *bhaya* or fear of the state that the people observe these injunctions, and the sanctity of property is kept entire.

A distinction is here brought out between mere *bhoga* and *mamatva* as the basis of the difference between the non-state and the state. In Europe the identical discrimination has been made by Rousseau in his *Social Contract*. "In the state of nature," says he, "there is but possession which is only the effect of the force or right of the first occupant;" whereas "ownership which is founded only upon a positive title" is an incident of "civil society."

Property (*bhoga* plus *mamatva*), then, is a *differentium* between the non-state and the state. And juridically speaking, the property taken cognizance of by the state is *laukika*, *i.e.* worldly, material, or

secular, as the *Mitākshara*, the *Sarasvatī-vilāsa*, and other law-books make it clear.[1] Thus considered it is necessarily also a *differentium* between the state and the extra-state, e.g. a Sukhāvati, the transcendental Land of Bliss in Buddhist metaphysical lore.[2] For, in that supersensuous region "beings are not born with any idea of property even with regard to their own body." Besides, according to the *Gītā*, property is not to be acquired by ascetics and monks who desire to live, like the Senecan "wise man" or the Catholic Capuchin, an extra-statal or super-political life, in which, as the proverb goes, man is either a beast or a god.

We are not concerned here, however, with property, *laukika* as it is, in its bearings as a legal institution. The Hindu analysis of the distinction between real and personal property or discussion of the right to use, destroy, transfer, bequeath and sell each species of property, need not therefore detain us. We are interested for the present in the concept of property as a political category only, *i.e.* as influencing the theory of the state. But it may be remarked, in passing, that it is the state backed by *daṇḍa* that gives validity to the "seven modes" (*Manu*, X. 115) of acquiring property and to its "three titles" (*Vasishṭha*, XVI. 10) as well as to other legal incidents.[3]

Nor does it fall within our scope to discuss the concept of property as an economic entity. Obviously, of course, the property generated by the state is Aristotelian in its exclusiveness, as the phrase *mamedam* signifies. It does not contemplate the communism of Plato or of More. "A field," says Manu (IX. 44), "belongs to him who cleared away the forests, and a deer to him who first wounded it." This is individualistic tenure and jurisdiction in their primitive form.[4] But no matter whether held in common or private, it is pertinent to observe that the sacredness of property can be established only by the state through its *daṇḍa*.

Two miraculous changes are effected in social life, once private property is thus ushered into existence. First, people can sleep at night without anxiety "with doors open." And secondly, women decked

[1] Jolly's *Recht und Sitte* (Strassburg, 1896), p. 91. *Svatvam laukikam (das Eigentum ist weltlich)*; *Sarasvatī-vilāsa "geht vielleicht am weitesten in dieser Richtung in dem es die Entstehung des Eigentums aus rein weltlichen Akten betont."*

[2] *Buddhist Mahāyāna Texts* (Sacred Books of the East Series), Vol. XLIX., Part II., pp. 13, 43, 55.

[3] Jolly, pp. 90-92.

[4] C.J.M. Letourneau: *Property: Its Origin and Development* (London, 1907), p. 72.

with ornaments may walk without fear though "unattended by men" (*Mahā.*, *Śānti*, LXVIII. 30-32). Property is in Hindu philosophy thus considered to be not the cause but the effect of the state. The position is entirely opposite to that of the Marxian "economic interpretation of history."

This sense of security as regards property is therefore the first great achievement in the humanization of Caliban. This is the first item in the civilizing of man by *daṇḍa* out of the *mātsya-nyāya* or "law of beasts or birds." One can, therefore, discover in *daṇḍa* the very foundation of human liberty and progress. And this is the standpoint of Hindu political philosophy as of modern "idealism" in European philosophy.[1]

4. THE DOCTRINE OF DHARMA (LAW, JUSTICE AND DUTY)

Property is the first acquisition of man through the state. His second acquisition is *dharma*. The doctrine of *dharma* is like the doctrine of *mamatva* an essential factor in the theory of the state, and both have their foundations in the doctrine of *daṇḍa*.

There is no *dharma* in the non-state, *i.e.* in the condition of men left to themselves. It comes into existence with the state. *Dharma* is created by the state or rather by its sanction, *daṇḍa* (*Manu*, VII. 14, 15, 18). No state, no *dharma*. *Dharma* does not flourish where "politics" is not, it flourishes only as long as there is the state. In other words, *dharma* appears as *mātsya-nyāya* disappears, and *dharma* ceases to exist with the extinction of the state. Logically, therefore, a people can have no *dharma* when its statal life is abolished, e.g. through loss of freedom, revolution or anarchy.

We shall now proceed to analyse this *dharma*. What is that category in Hindu philosophy which, besides property, serves to differentiate the state from the non-state? What is that characteristic, shorn of which, as shorn of *mamatva*, the state would revert to the condition of *mātsya-nyāya*? The answer to these questions lies in the doctrine of *dharma*.

Dharma is a very elastic term. Like *jus*, *Recht*, *droit*, *diritto*, it has more than one meaning. It really admits of almost all the ambiguities associated with the term "law" as analysed by Holland in his *Jurisprudence*. Thus there are at least five senses in which *dharma* can be used both in scientific treatises as well as in common parlance, namely,

[1] U. Redanò: *Lo Stato Etico* (Florence, 1927), pp. 278-282.

1. Religion, a category of theology, e.g. Confucian *dharma*, Mohammedan *dharma*, Christian *dharma*, Hindu *dharma*, etc.
2. Virtue, as opposed to vice or sin, a category of ethics.
3. Law, as a category of jurisprudence.
4. Justice.
5. Duty.

For purposes of political theory we need not attend to 1 and 2 for the time being and may confine ourselves to the import of *dharma* as law, justice, and duty, as somewhat new values of life. The doctrine of *dharma* then enunciates three propositions: first, that the state differs from the non-state as a law-giving institution; secondly, that the state differs from the non-state as a justice-dispensing institution; and thirdly, that the state differs from the non-state as a duty-enforcing institution.

In the *mātsya-nyāya* there is no law, no justice, no duty. The state is the originator of law, justice and duty.

A. DHARMA AS LAW

Dharma (law) is the creation of the state, and the state as such has the sanction of *daṇḍa*. Theoretically, therefore, every *dharma*, if it is nothing but *dharma*, is *ipso facto* what should be called "positive" in the Austinian sense. *Dharma* is obeyed as *dharma*, only because of the coercive might of the state. All *dharma-śāstras*, *i.e.* the legal text-books, e.g. those of Manu, Yājñavalkya, Nārada, Bṛihaspati and others, would thus automatically acquire the character of "statute"-books simply because their validity, provided they have any validity, depends on the authority of the state. The Yājñavalkyas and Manus would obviously have no "sanction" in a condition of *mātsya-nyāya*.

But probably, so far as actual practice is concerned, the *dharma-śāstras* of India had no greater sanctity than as treatises embodying the "positive morality" of the different ages. Let us therefore examine how the nature of *dharma* (as law) was understood by the theorists themselves. As is well known, law as a category of jurisprudence has passed through two stages in European thought. The same two concepts we notice in Hindu political philosophy also.

In ancient European theory law is the embodiment of eternal justice. Thus according to Demosthenes (fourth century B.C.) laws are the gifts of the gods and the discovery of the sages. In Aristotle's conception

law is the rule of god and reason. Stoics like Cicero and Seneca believed that law lies in the hearts of all men.

The doctrine of "natural law," of law as the "king of all things," was maintained by the jurists such as Gaius and others whose views are codified in the *Digest* of Justinian. It was the theory also of Celsus and other Church Fathers. In mediæval European (Teutonic) theory,[1] so far as there was any theory independent of the tradition of Roman jurisprudence, law was not something "made" or created at all, but something which existed as a part of the national, or local, or tribal life.

The modern theory of law in Europe may be said to have originated in the sixteenth and seventeenth centuries with Bodin and Hobbes in their analysis of sovereignty. It has since become classical, however, as the handiwork of Austin, the father of analytical jurisprudence (Lecture VI). According to this view, law is the command of the sovereign enforced by a sanction.

Thus there are two theories of law—first, law as uncreated or original, existing either as a part of the universal human conscience, taught by "natural reason," or as a custom among the people; and secondly, law as created by the fiat of a law-maker, as something which is to be obeyed not because it is just, good or eternal, but because it has been enacted by the state. Both these conceptions are to be found among the speculations of Hindu political philosophers. The distinction between positive law and ethics is clearly set forth in Vijñāneśvara (eleventh century) in his notes on the text of Yājñavalkya[2] in regard to the judicial duties of the king.

The ethical conception of law as the dictate of conscience, *i.e.* as *jus naturale* has a long tradition in Hindu thought. In the *Bṛihadāraṇyaka Upanishad* (I. 4. 14) law is identical with truth and as powerful as king. It is of course the creation of God. Brahman (God), we are told, "was not strong enough." So he "created still further the most excellent *dharma*....There is nothing higher than law. Thenceforth even a weak man rules a stronger with the help of the law, as with the help of a king. Thus the law is what is called the true. And if a man declares what is truth, they say he declares the law; and if he declares the law, they say he declares what is true. Thus both are the same."

[1] Carlyle, Vol. I., p. 235; T. Mackenzie: *Studies in Roman Law* (Edinburgh, 1862); G. L. Gomme: *Folklore as an Historical Science* (London, 1908), pp. 84-100.

[2] T. N. Mitra: *Law Relating to Hindu Widow* (Calcutta, 1881), pp. 32-33, K. L. Sarkar: *Rules of Interpretation in Hindu Law* (Calcutta), Lect. IX, p. 116.

According to Āpastamba (I. 7, 20, 8), law is what is "unanimously approved in all countries by men of the Aryan society who have been properly obedient to their teachers, who are aged, of subdued senses, neither given to avarice nor hypocrites." In the *Manu Saṁhitā* (II. 1), again, law is whatever is practised and cherished at heart by the virtuous and the learned who are devoid of prejudices and passions. Vasishṭha (I. 5, 6), and Baudhāyana (I. 1. 1, 4-6) also hold the view that law is the practice of the *śishṭas, i.e.* those "whose hearts are free from desire." The *śishṭas*, or *ṛishis, i.e.* passionless and unavaricious persons of India, are obviously the "sages" of Demosthenes.

And in Yājñavalkya's Code (I. 1, i, Introduction, 7), according to which law is *sadāchāra, i.e.* the "practice or conduct of good men," what "seems pleasant or good to one's self," and the "desire that springs from mature consideration," as well as in the *Vyavahāra Darpaṇa*, where law is described as something "eternal and self-existent, the king of kings," "far more powerful and right" than they, we have once more the Oriental counterpart of Greek, Stoic, Roman and Patristic conceptions of law as morality.

In Hindu analysis *dharma* came to be defined as positive law also. The conception of law as *rājñām ājñā* in Kauṭalya's language, *i.e.* as command enforced by sanction, finds clear expression in the writings of Nārada, Śukra, Jaimini and his commentator Śabara Svāmī. In Nārada's *Smṛiti* (Introduction, 1, 2), we are informed that the performance of duty having fallen into disuse, positive law (*vyavahāra*) has been introduced, and that the king as superintending the law is known as *daṇḍa-dhara* or wielder of *daṇḍa* (the power to punish). The sanction is definitely mentioned in the *Śukra-nīti* (I, lines 623-624), according to which the sovereign should categorically state in his command that he would "surely destroy by severe punishment those offenders who after having heard his decrees would act contrary to them."

In order that the law may be seriously recognized as command Śukra stipulates that the greatest amount of publicity should be given to it. For instance, it is the duty of the sovereign to have the laws announced by the state drum (I, lines 625-626) or have them inscribed in esplanades as written notices. The documents embodying these commands (*śāsana-patra*) are to bear the king's signature, date, etc. (II, lines 607-608). Laws thus being the promulgations of the state, we read further in the *Śukra-nīti* (IV. i, lines 116-119) that the king is the "maker of the age," the "cause of time," and of the good and evil practices,

and that since the ruler is the dictator of virtues and vices, people make it a point to practise that by which he is satisfied. Besides, as law is upheld by sanction we can easily understand why Śukra advises the sovereign to make use of his terrible weapon (I, line 120) in order to maintain the people each in his proper sphere.

The same idea of positive law is expressed by Jaimini in the very definition of *dharma*. The *Mīmāṁsā-sūtra* declares *chodanālakshaṇo-'rtho dharmaḥ*.[1] *Dharma* is that desired object (*artha*) which is characterized by command (*chodanā*). Jaimini has also examined the reason as to why that which is determined by a command should be obligatory. He analyses the reason as lying in the fact that "the relation between the word of command and the purpose to which it is directed is eternally efficacious."[2]

The doctrine of *dharma* as law introduces into the theory of the state the cardinal element of *aiśvarya* or *svāmitva*, *i.e.* sovereignty. Whether *dharma* be taken as equivalent to the dictates of a moral sense, or as the observance of a tribal or some other established usage, or as the deliberate order issued by an authority with threat of punishment in case of violation, it is clear enough that *dharma* is like *daṇḍa* the most awe-inspiring fact in the state's life. *Daṇḍa* and *dharma* are indeed the two faces of the political Janus, so to speak, the one looking to the failures, the other to the triumphs. Or, to express the same thing in a different way, *daṇḍa* is the root of a tree which flowers in *dharma*. The state can be recognized positively by *dharma*, which is in evidence while *daṇḍa* maintains its vitality from behind.

B. DHARMA AS JUSTICE

We have now to understand the doctrine of *dharma* as justice in its bearing on the theory of the state. Justice does not exist in the *mātsya-nyāya*. If therefore a reversion to *mātsya-nyāya* is to be avoided, *i.e.* if the state is to be maintained, justice must not be tampered with. Justice is necessarily as integral a limb of sovereignty in Hindu conception as law.

The dignity of justice has been declared by Manu (VIII. 15) in the following terms: "If justice is violated, it destroys the state; if preserved, it maintains the state. Therefore justice must not be destroyed."

[1] Ganganath Jha's "Śabara Svāmi's Commentary on Jaimini's Mīmāṁsā" in *Indian Thought* for 1910.
[2] K. L. Sarkar, Lect. I., pp. 23-24.

Such sentiments in the *Manu Saṁhitā* could be bodily incorporated in the writings of a Jonas or an Alcuin of the ninth century and other mediæval European theorists[1] with whom the maintenance of justice is the *sine qua non* of the state and kingship.

But what is justice? It is a most practical or pragmatic definition that Hindu theorists offer. According to Manu (VIII. 3) justice consists in the application of law to the cases arising between the members of the state. And that law is to be known from the customs and from the *Institutes,* e.g. those of Gautama, Yājñavalkya and others.

Justice as interpreted by Śukra (IV. v, lines 7-11) consists of two elements: First, it consists in a discrimination of the good from the bad (of course, according to the laws). Secondly, it has a utilitarian basis inasmuch as it is calculated to minister to the virtues of the rulers and the ruled and promote the common weal.

The doctrine of *dharma* as justice is thus organically connected with the theory of the state as contrasted with the non-state.

C. DHARMA AS DUTY

Mātsya-nyāya is a condition in which duties are nil. According to the *Śāntiparva* (LXVIII. 16) men left to themselves tend even to persecute their mothers, fathers, the aged, the teachers, the guests and the preceptors. It is the fear of *daṇḍa* that brings about an order among men, each man minding his own duty (*svadharma*) (*Śānti,* LXVIII. 8; *Manu,* VII. 21, 22, 24; *Śukra,* I, lines 45-51). The doctrine of *dharma* as duty is thus, like that of *dharma* as justice, naturally a doctrine of the conservation of the state. It is only from this standpoint that the theory of duties has a bearing on the theory of the state.

The doctrine of duty as stated in the *Gītā* (Ch. III) runs thus: "One's own duty, though defective, is better than another's duty well performed. Death in performing one's own duty is preferable; the performance of the duties of others is dangerous."[2] The passage here has no mere metaphysical significance. This theory of *svadharma* (one's own duty) or "My Station and Its Duties," as Bradley would define it, has a political significance as well. It has the sanction of the state behind it; for, says Manu (VIII. 335) "neither a father, nor a teacher, nor a friend, nor a mother, nor a wife, nor a son, nor a domestic

[1] Carlyle, III., p. 109.

[2] Cf. Bosanquet: *Philosophical Theory of the State* (London, 1899), pp. 204-207; Barker: *Plato and His Predecessors* (London, 1918), p. 176.

priest must be left unpunished if they do not keep within their duty." According to Śukra (I, line 120; IV. iii, line 15) also the people should be kept each in his proper sphere by a "terrible use" of the weapon of sovereignty.

Duties are thus enforced by *daṇḍa*, which also backs the laws. Indeed from the angle of the *prajā* or *prakṛiti* (the people in the state), *dharma* as duty is but the obverse of *dharma* as law. What the state calls "laws" are recognized as "duties" by its members as a matter of course. The doctrine of duty is thus identical with that of law turned inside out.

Altogether, then, the doctrine of *dharma* in its entirety imparts to the state the character of an institution for the advancement of *la civiltà*, *Kultur*, "culture." The state elevates man out of the law of beasts by instituting legislation, adjudication, and enforcement of duties. The functions of the state are thus in keeping with the ideas involved in the doctrine of *daṇḍa*. The state as a pedagogic or purgatorial or moral-training institution is not merely a *mamatva*-insuring instrument, *i.e.* a property-securing agency, but a *dharma*-promoting *samūha* (public association), *i.e. lo stato etico* of Redanò, the *Rechtsstaat* of Jellinek, *i.e.* the *Kulturstaat* of Fichte or Hegel or the "virtue-state" of Plato. And herein the Hindu theory meets Aristotle's conception of the state as the means to the furtherance of the "highest good" of man.

5. THE DOCTRINE OF VARNĀSRAMA (CLASSES AND STAGES)

Out of *mātsya-nyāya* evolves *dharma* through the fiat of *daṇḍa*. Now *dharma* has need to be embodied, *i.e. lo stato etico*, *l'organismo spirituale*, the *Kulturstaat* must have to materialize in space and time. This is accomplished in the *rāshṭra*, which provides *aiśvarya* (sovereignty) with "a local habitation and a name." It is in and for the *rāshṭra* that the state institutes *mamatva* and *dharma*. Property, law, justice and duty are concretely realized through this medium. The doctrine of *rāshṭra* thus furnishes the crowning arch in the Hindu theory of the state.

What is this *rāshṭra*? It signifies "the country." According to Śukra (IV. iii, line 2) both "movable and immovable things" are indicated by the term. It is a territorial concept comprehending an aggregate of human beings and material possessions and thus constitutes the "physical basis" of the state. It may be taken almost as equivalent to *res publica*. The doctrine of *rāshṭra* would therefore naturally consist

of two parts: (1) the doctrine of property and (2) the doctrine of *prajā*, *prakṛiti* or population. The doctrine of property has already been investigated. Let us now examine the doctrine of population in its bearing on the theory of the state.

In the *mātsya-nyāya* condition there is the people, but no state, because there is no *daṇḍa* to enforce *dharma*. If the *prajā* is not to remain *ad infinitum* an amorphous mass of *selb-ständing* atoms, it must have to follow *svadharma*, *i.e.* the members of the society must perform their respective "duties," which, as we have seen, are really "laws" turned inside out. The observance of these duties would necessarily imply the organization of the people into a unified state, a *samūha* or a *polis*.

Now, organizationally speaking, the *prakṛiti* or members of a society naturally fall into economic and professional groups, classes or orders, the *groupements professionnels*, the so-called castes of India. The alleged classification of a society into four occupational groups, e.g. Brāhmaṇa, Kshatriya, etc., is however a conventional myth, at best a legal fiction. Students of *Realpolitik* like Śukra (IV. iii, lines 22-23) are aware that the actual number of these orders or castes is "unlimited." The reason, as may be guessed, is stated in the *Śukra-nīti* to be the "intermixture of blood through marriages." These orders of *prajā* or classes of members of the state are known as *varṇas*, *i.e.* colours, probably designated after some typical (or hypothetical?) ethnic complexion. Further, from the standpoint of the individual, we have to notice that people pass through well-marked metabolistic or rather physiological stages, e.g. infancy, adolescence, etc. These stages or periods of life in every person are called the *āśramas*. They are arbitrarily known to be four in the span of human existence.

The total population with all its interests and problems of all the different periods of life is then comprehended by the two categories, *varṇas* (classes) and *āśramas* (stages) (*Kāmandaka*, II. 18-35). If therefore the people is to constitute a state, every member of each of the *varṇas* (no matter what their number and what their occupations) must have to observe the *Ordnung*, system or discipline, *i.e.* perform the duties (*svadharma*) of his "station" at each of the four *āśramas* or periods of life. Thus, the soldier at the front must "do or die," the young man while at school must not marry, the king must keep to the coronation oath, and so forth. This is the doctrine of *varṇāśrama*, the

counterpart of the Platonic correlation of "virtue" and status (*Republic*, II, III, IV).[1]

Incidentally we may refer to what a contemporary French author[2] analysing the conception of the "masses" as equivalent to "the peoples" has to say about the existence of "castes" in European social polity. He maintains that *l'état social* of peoples such as have "attained to certain degree of civilization" comprises not only the "*classes definissables par leur genre de vie, leur education, leurs manières, leurs occupations*," etc. (classes distinguishable according to their mode of living, education, manners, occupations, etc., etc.), but also "*des castes, classes héréditaires et assez fermes* (castes, *i.e.* hereditary and very closed classes). Instances of such castes or "hereditary and very closed classes" are furnished by this writer from *la noblesse sous l'ancien régime* (the French aristocracy previous to the revolutions of 1789-93) and the Roman patriciate. These are characterized, says he, "as in India" by the "community of professional occupations and religious observances," even by a "certain community of race." And these European castes are in his judgement at the same time professional groups, religious groups and ethnic groups.

We are not for the time being interested in the question of the universality of "castes" in addition to that of "classes." We would stress only that in the Hindu philosophy of social anatomy and social physiology it is necessary to observe the fiat of the political factor, the state. Students of the "new sociology" ought to note that the doctrine of social stratification, order and discipline is essentially political. This indeed is a substantial contribution of Hindu thought to the study of human relations.

As soon, therefore, as the *prajā* is organized into a state, be it in any part of the world or in any epoch of history, a *varṇāśrama* spontaneously emerges into being. It is inconceivable, in this theory, that there should be a state and yet no *varṇāśrama*. To say that the state has been born and yet the various orders or classes of the people do not follow *dharma* would indeed be a contradiction in terms, a logical absurdity. *Svadharma* (*Recht*) leads inevitably to *varṇāśrama* (*Ordnung*). The two are "relative" terms. In Koellreletter's ter-

[1] See the present writer's *Pos. Back.* Vol. II (1921), p. 90, and "Die Struktur des Volkes in der sozialwissenschaftlichen Lehre der Schukraniti" (*Kölner Vierteljahrshefte für Soziologie*, Cologne, 1931).

[2] A. Joussain: "Introduction à la Psychologie des Masses" (*Revue Internationale de Sociologie*, Paris, May-June, 1935).

minology[1] *der Rechtsstaat* is at the same time *der Ordnungsstaat*. They indicate coexistent phenomena in the social world. In other words, the doctrine of *varṇāśrama* is a corollary to that of *dharma* as duty, *varṇāśrama* is but *svadharma* " writ large."

The non-existence of *varṇāśrama* is possible only under conditions of non-performance of duty. Suppose the *varṇas* do not follow *dharma*, e.g. the soldier flies from the enemy in a cowardly manner, the husband does not maintain the wife, the judge encourages the fabrication of false evidence, the king violates the *samaya* or compact with the *prakṛiti* and so forth. According to Śukra (IV. iv, lines 6, 82-83) the offenders are to be rectified by the *daṇḍa* of the state. This is the supreme moment for the exercise of *aiśvarya* (sovereignty) and *Staatsrāson* (interests or reasons of the state). Why, even the king is not immune from penalty. Rather, as Manu (VIII. 336) declares " the settled rule," where " a common man would be fined one *kārshāpaṇa*, the king shall be fined one thousand." Really, a state is no state unless it can enforce as duty the *dharma* that it has enacted as law. This should be postulated in the irreducible minimum of the state's functions. One can therefore easily understand with Kāmandaka (II. 34) why if *dharma* is violated by the members of the state there is bound to be a *pralaya* or dissolution of the world. Verily, with the extinction of *varṇāśrama* there is a reversion to *mātsya-nyāya*. The violation of *svadharma* and of *varṇāśrama* brings back the " state of nature " and the state automatically ceases to exist.

Varṇāśrama, though obviously an ethnico-economic and a socio-pedagogic term, is thus fundamentally a political concept. It is an indispensable category in an organic theory of the state. It is identical with *rāshṭra* from the demographic (*prajā* or population) aspect. The doctrine of *varṇāśrama* is therefore the doctrine of *rāshṭra* minus the doctrine of property; and further, the doctrine of *dharma* (as law and duty) applied to the total *prakṛiti* (or members of the state) coincides with the doctrine of classes and stages. The doctrine of *varṇāśrama* then is clearly an integral part in a consistent philosophy of politics.

From the standpoint of the *soziale Beziehungen*, social relations and social interests, such as are being studied by the " new sociology " in Eur-America since the publication of Tönnies's *Gemeinschaft und Gesellschaft* (1887), it may be pointed out that the Hindu category of classes and stages as embodied in the doctrine of *varṇāśrama* is one of the most scientific and psychologically sound formulæ in regard to the

[1] *Deutsches Verfassungsrecht* (Berlin, 1935), pp. 11-15.

understanding of the "geometry" or "formal" anatomy and physiology of society. Without reference to the actual social conditions prevailing in India through the ages, we should be inclined to appraise this doctrine as the greatest single contribution of Hindu philosophy to societal science.

6. THE DOCTRINE OF MAṆḌALA (GEOPOLITICAL SPHERE)

The conception of "external" *aiśvarya* (sovereignty) was well established in the Hindu philosophy of the state. The Hindu thinkers not only analyzed sovereignty with regard to the constituent elements in a single state, they realized also that sovereignty is not complete unless it is external as well as internal, that is, unless the state can exercise its internal authority unobstructed by, and independently of, other states.

"Great misery," says Śukra, "comes of dependence on others. There is no greater happiness than that from self-rule." This is one of the maxims of the *Śukra-nīti* (III, line 646) bearing on the freedom of the *rāshṭra*, or the land and the people in a state. Kauṭalya also in his remarks on "foreign rule" expresses the same idea in a negative manner. Under it, we are told in his *Artha-śāstra* (VIII. ii),[1] the country is not treated as one's own land, it is impoverished, its wealth carried off, or it is treated "as a commercial article." The description is suggestive of John Stuart Mill's metaphor of the "cattle farm" applied to the "government of one people by another."

The doctrine of independence (*svārājya, aparādhīnatva*) implied in this conception of external sovereignty was obviously the foundation of the theory of the state in relation to other states. And it gave rise to certain categories of *droit des gens* or *jus gentium*, which normally influenced Hindu political thinking from at least the fourth century B.C. These concepts can more or less be grouped under the doctrine of *maṇḍala, i.e.* sphere or circle (of influence, interests, ambitions, enterprise, and what not). Using the expression of Karl Haushofer, one can describe this *maṇḍala* as a complex of "geopolitical" relations,[2] *i.e.* all those situations relating to boundaries and the contracts with foreign races such as every statesman must carefully attend to.

[1] *Indian Antiquary*, 1910, p. 83. For older uses of the concept of *svarāj* (self-rule) *vide* the *Atharva-Veda* XVII. i. 22, 23, also Macdonell and Keith: *Vedic Index* Vol. II., p. 494.

[2] K. Haushofer: *Geopolitik der Pan-Ideen* (Berlin, 1931); K. Haushofer (editor): *Raumüberwindende Mächte* (Leipzig, 1934); Henning: *Geopolitik* (Leipzig, 1931); B. K. Sarkar: "Haushofer's Cult of Geopolitik" (*Calcutta Review*, April, 1934).

This doctrine of *maṇḍala*, underlying as it does the Hindu idea of the "balance of power," pervades the entire speculation on the subject of international relations. It is hinted at by Śukra (IV. i, lines 39-43) and referred to by Manu (VII. 154, 156, 207). Kāmandaka has devoted a whole chapter (VIII) to the topic. It has been exhaustively treated by Kauṭalya (VI. ii). We are not concerned here with the doctrine as such; we shall only study it in its bearing on the theory of sovereignty.

In the first place, the doctrine of *maṇḍala* is essentially the doctrine of *vijigishu* (aspirant to conquest), of a Siegfried. It is the cult of expansion. Now the *Mahābhārata* (XII. lvi. 15; V. cxxvii. 19-20; cxxxiv. 39)[1] inculcates the ethics of "manliness as the highest thing" and characterizes it as consisting in a ceaseless "upward striving." The same aspiration to "press only up" and "bend not" or "elect glory even at the cost of life" can influence each and all of the states on earth. The doctrine becomes necessarily a spur to the struggle for existence, self-assertion and world domination among the Siegfrieds. The conception is thus altogether a dynamic factor calculated to disturb the equilibrium and *status quo* of international politics.

First, then, in regard to the doctrine of *vijigishu*. According to Kauṭalya[2] it is the ambition of each state to acquire "strength and happiness" for the people. The *élan vital* of a ruler in Kāmandaka's conception also lies in the "aspiration to conquer" (VIII, 1, 3, 6). The king, says he, should establish in himself the *nābhi* (or centre of gravity) of a system. He should become the lord of a *maṇḍala*. It is part of his duty to try to have "a full sphere around him" just as the "moon is encircled by a complete orb." The "full sphere" is, of course, the circle of states related to the Siegfried as allies, enemies and neutrals. Perpetual "preparedness" must therefore be the first postulate of *Realpolitik* in Hindu theory. "One should be ever ready with *daṇḍa*" (the "mailed fist"), declares Manu (VII, 102, 107) quite seriously, "should always have one's might in evidence and policies well-guarded, as well as be ever on the look-out for the enemy's holes." Further, one should "bring to subjection all those elements that are obstacles to the career of triumph."

The *rationale* of this preparedness is very simple indeed. It is as elemental as human blood itself. It goes without question in the *Śukra-*

[1] Hopkins: "The Position of the Ruling Caste as represented in the Mahābhārata" (*Journal of the American Oriental Society*, 1889, pp. 156, 787-189).

[2] *Ind. Ant.*, 1900, p. 184.

niti (IV. i, lines 15-17) that "all rulers are unfriendly," nay, they are "secret enemies to those who are rising, vigorous, virtuous and powerful." This position of Śukra's was maintained by Fichte[1] in 1807 and is identical with that of Carl Schmitt (*Der Begriff des Politischen*, 1927) and of Oswald Spengler (*Jahre der Entscheidung*, 1933), both of whom hold that in the war-relation or war-situation is to be found the proper political situation (*der eigentliche politische Zustand*).[2] According to them, further, as in Hindu political philosophy, the essence of foreign politics lies only in the conflicting relations or rivalries of the peoples. "What wonder in this?" asks Śukra, and his solution is given in another query which carries its own answer: viz. "Are not the rulers covetous of territory?" Such being the data of international psychology, Kāmandaka (VIII, 58, 67) frankly suggests that "in order to do away with one's enemies their kith and kin should be employed" whenever possible. For, is not poison outdone by poison, diamond cut by diamond, and the elephant subdued by the elephant? "Fishes, again, swallow fishes, similarly relatives." The *Rāmāyaṇa* is cited in the *Kāmandakī-niti* for a corresponding precedent in diplomatic tactics. The fact is well known that in order to overthrow Rāvaṇa his brother Vibhishaṇa was exploited by Rāma.

The *vijigishu*, then, cannot by any means afford to indulge in pious wishes or have faith in the utopian statecraft of idealistic dreamers. What under these conditions are likely to be the relations between the hypothetical Siegfrieds of the *niti-śāstras*? These firebrands are normally endowed with a war-mentality and a bellicose attitude. The world in their eyes is a theatre of warfare and equipment for warfare, as it has really been since the Chinese philosopher Sun Tzu wrote his *Art of War*; and they proceed on the assumption that nothing can be unfair in war. The student of political science must therefore have to make almost the same remarks about the "aspirants" of Hindu political speculation as those of Grotius in the prolegomena to his epoch-making *Law of War and Peace* (1625). "I saw prevailing throughout the Christian world," writes the father of international law in regard to the European international politics of the early seventeenth century, "a license in making war of which even barbarous nations would have been ashamed. Recourse was had to arms for slight reason or no reason, and when arms

[1] F. Meinecke: *Die Idee der Staatsräson* (Munich, 1925), pp. 462-463.

[2] O. Koellreutter: *Deutsches Verfassungsrecht* (Berlin, 1935), p. 4. The ideas of Schmitt and Spengler are combated by this author while offering the nationalsocialistic viewpoint of politics.

were taken up, all reverence for divine and human law was thrown away, just as if men were henceforth authorized to commit all crimes without restraint."

The *vijigishu* would think like Maude of the British War Office that the "surest means of keeping the peace is war" or like Stockton, the American militarist, that "the army and the navy is not a burden during peace, but if properly maintained is but a paying business proposition." He can also have the idealism of a Hegel in order to support his *sādhanā* or *Streben* to win the place in the sun, and if necessary may as well induct the ancient Greek sophists in his service to prove that might is right.

The theorists who propounded the cult of *vijigīshu* would have been in good company with the philosophers of ancient Greece. In Aristotle's postulate of "natural" slaves, "natural" masters, "natural" wars, and so forth, the writers of *nīti-śāstras* could easily find a place for the "natural" aspirations, "natural" allies and "natural" enemies of their doctrine of *maṇḍala*. The *Politica* assumes that the "barbarians," or non-Greeks, were intended by nature to be slaves (I. ii, vi) and ruled by the Greeks. And since slaves are "property" like "other things," warfare with the object of making slaves and thus acquiring wealth is a legitimate and "naturally just" occupation (I. viii). This Aristotelian justification of warfare can be easily recognized as forming the theoretical basis and psychological background of all wars from the conquests of Alexander and the Roman Cæsars down to the Thirty Years' War.[1] Furthermore, the methods and tactics of the Christian *vijigīshus* who are responsible for the expansion of Europe in Asia, Africa and America, down to Italy's exploits in Abyssinia (1935), can all be traced to the *dicta* of the father of political science, though as a rule moralists are apt to associate them with the teachings of Machiavelli's *Prince* (1513).

The opinions adumbrated in the *nīti-śāstras* are in any case neither exclusively Oriental nor exclusively medieval or primitive. Nor need they be dubbed exclusively Machiavellian. For, has not the *Prince* furnished the fundamental logic of statesmen from the Athenian Pericles and Macedonian Philip down to the Metternichs, Bismarcks and Cavours of our own times? "Also it must be recognized," as Figgis, justifying

[1] T. J. Lawrence: *Essays on Modern International Law* (Cambridge, 1889) IV; Machiavelli: *Discourses*, Bk. II, xxi; W. S. Lilly: *First Principles in Politics* (London, 1907), p. 56; Hobhouse: *Metaphysical Theory of the State* (London, 1918), pp. 100-103; R. Stockton: *Peace Insurance* (Chicago, 1915), p. 203

the methodology of Machiavelli, says in his volume on political theory *From Gerson to Grotius* (1907, p. 101), "that in a state of things like international politics, where there is no recognized superior, and even International Law is but the voice of public opinion, the condition of affairs is very much more nearly akin to the state of nature as imagined by Hobbes than it is in the relation of individuals." It is on such considerations that, like Machiavellism, the doctrine of *vijigishu* maintains its legitimate place in a theory of international relations. It provides an unvarnished statement of the only hypothesis, namely, that of *Staatsräson*, which can satisfactorily explain the innate militarism that the human world inherits from "beasts and birds."

Let us now examine the other aspects of the doctrine of *maṇḍala*, that of the struggle for existence and "place in the sun" among the states. To a *vijigishu*, as Bhishma (*Mahā.* II. lxix. 15) declares, "right is that which a strong man understands to be right," and the international *mores* of the *Mahābhārata* is summed up in the dictum that "victory is the root of right," just as its creed of life for the individual appraises "death as better than lack of fame."[1] How, then, is this quest of fame, victory or world-domination to be regulated by each state in competition with the others? Are there any rules or methods by which the competing states may guide themselves in this conflict of aspirations? These constitute in substance a natural corollary to the doctrine of *vijigishu*.

The "proper study" of the *vijigishu* is, according to the *Manu Saṁhitā* (VII. 154), his own and his enemy's spheres, his *geopolitische Lage*, *i.e.* the politics of his boundaries. And how are these spheres located in his imagination? Śukra (IV. i, lines 39-41) gives a brief summary of the Siegfried's investigations as to the "balance of forces" or "conjuncture of circumstances" with a view to the "Next War." We are told that the enemies diminish in importance according as they are remote from the "centre of the sphere." First to be dreaded by the *vijigishu* are those who are situated around or very near to his own state, then those who live farther away and so on. With the remoteness of location, enmity, hatred or rivalry naturally declines. Whether a state is to be treated as inimical, indifferent or friendly depends *per se* on its propinquity or distance. The geographical distribution of states influences their psychology in regard to their neighbours as a matter of course in such an order that the positive antipathy of the nearest dwindles into the tolerable apathy of the next, and gives way to the active sympathy

[1] *J.A.O.S.*, 1889, pp. 187-189.

and even friendliness of the farthest distant. This, however, is not the only possible grouping of powers in a *vijigīshu's* political estimation or diplomatic "planning." The *Śukra-nīti* (IV. i, lines 42-43) gives another order in which the states may be distributed. According to this computation, first are situated the enemies, then come the friends, next the neutrals, and the most remote on all sides are the enemies again.

These are the elementary principles of international dealings of which elaborate accounts are given in the writings of Kauṭalya and Kāmandaka. The theory holds that there is a hypothetical tug-of-war always being fought between the *vijigishu* and his *ari* (the enemy). These two are the combatants or belligerents. Along with these are to be counted another two states in order to furnish a logical completeness to the hypothesis. The *quadrivium* consists of the following members (*Manu*, VII. 156, *Kāmandaka*, VIII. 20):[1]

1. The *vijigishu*: the aspirant, e.g. an Alexander "mewing his might" bent on "conquering and to conquer."

2. The *ari* (the enemy): the one that is situated anywhere immediately on the circumference of the aspirant's territory.

3. The *madhyama* (the mediatory, middling or medium-power state): the one located close to the aspirant and his enemy capable of helping both the belligerents, whether united or disunited, or of resisting either of them individually.

4. The *udāsina* (the towering or the highest state): the one (situated beyond 1, 2 and 3) very powerful and capable of helping the aspirant, the enemy and the *madhyama*, together or individually, or resisting any of them individually.

These four states, then, constitute the smallest unit of international grouping—the "geopolitical" complex, so to say. From the standpoint of the *vijigishu* all other states are either his own allies or the allies of his enemy. Such states are held to be eight in number according to the hypothesis. How, now, is the "aspirant" to pick up his own allies from the crowd? He need only study the geographical position of these states with reference to the belligerents, *i.e.* to himself and to his enemy.

The *madhyama* (the middling) and the *udāsina* (the highest) may be neglected by the Siegfried, for the time being, in his calculation of the

[1] *Artha.*, Book VI, ch. ii, in the *Ind. Ant.* for 1909, p. 183. For a fuller account of the Kauṭalyan *maṇḍala* see N. N. Law: *Inter-state Relations in Ancient India* (Calcutta, 1920). For *madhyama* and *udāsina* see also the present author's "Nilakaṇṭha and Mitra-Miśra. Two Hindu Political Philosophers of the Seventeenth Century" (*Calcutta Review*, August, 1935).

possible array of forces directly allied or inimical to his career of conquest. The two belligerents, with the eight others (divided in equal proportion as their allies *in potentia*) are then located in the following order of *entente cordiale* by Kāmandaka (VIII. 16, 17) and Kauṭalya (VI. ii).

The " aspirant " occupies, of course, the hypothetical centre. Next to his front is the " enemy." Now we have to calculate frontwards and rearwards. Next to the " enemy " is situated (1) the aspirant's ally, next to that is (2) the enemy's ally, next (3) the ally of the aspirant's ally, and last (4) the ally of the enemy's ally. Rearwards from the aspirant: First is situated (1) the rearward enemy, next is (2) the rearward ally, then comes (3) the ally of the rearward enemy, and last (4) the ally of the rearward ally. In this scheme we have the " geometry " or " formal " morphology of *soziale Beziehungen* from the international standpoint.

It is to be observed that the doctrine of *maṇḍala* as developed by the Hindu philosophers is " geopolitically " too naïve and elementary, because the only factor that has been considered is the geographical propinquity or distance. They have considered neither the race (or blood) question nor the religious, linguistic or other cultural forces, nor of course the economic factors. And yet this almost puerile-looking, one-sided " geometry " of diplomatic planning possesses a profound importance in political speculations as well as applied politics.

There is nothing queer, archaic or unworkable in this conception of international relations. A simple illustration would show how humanly the political theorists of India approached the foreign policy of nations and analysed their " geopolitics." Thus, for instance, according to the Kauṭalyan doctrine of *maṇḍala*, the " natural enemies " of France engaged in studying the *modus operandi* for " the next war " would be Spain, England and Germany, and her " natural allies " Portugal, Scotland, Ireland and Russia. A French *vijigīshu*, e.g. a Napoleon, embarking on a war with Germany, should begin by taking steps to keep his " rear safe." With this object he should have Spain attacked by Portugal, and manage to play off the anti-English forces in Ireland and Scotland in such a manner that England may be preoccupied at home and unable to attack France in support of Germany. As Germany, on the other hand, is likely to have China as her natural ally (supposing there is no other state between Russia and the Far East), the French *vijigīshu* should set Russia against China, and so on. It is obvious that the

diplomatic feats conceived by the Hindu political philosophers could be verified almost to the letter by numerous instances in European and Asian history, especially in ancient and medieval times, when Eur-Asia was divided into numberless nationalities.

Nay, the principle of Kauṭalyan *maṇḍala* is in operation even now in the numerous states carved out of the old Germanistic empires by the Versailles and other Treaties of 1918-19. For instance, the manner in which Poland was being bolstered up in post-war years by France against Germany on the one hand and Soviet Russia on the other is in keeping with the adumbrations of the Old Asian Richelieu. Italy's pro-Hungarian sentiments as against Jugo-Slavia are also explicable quite easily by the *niti* theory of "geopolitics."

In the Italo-Abyssinian tension of October, 1935, for instance, France had to be sure of co-operation from her "natural" ally Russia as against Germany, the natural enemy of both, before she could decide to take a definite action. Every shrewd observer of the *geopolitische Lage* of any region can still proceed on the elemental foundations of Kauṭalyan *maṇḍala*. Only, one will have to introduce modifications into the "natural" relations created by geography or distance on account of special conditions engendered by the problem of raw material and food-stuff, race-affinities, cultural sympathies, etc. Kauṭalya will then be found to be valid even for to-day and to-morrow.

The doctrine of *maṇḍala* may then be regarded as another profound creation of Hindu political philosophy and one of the most fruitful contributions of India to the enrichment of human thought.

Be this as it may, we have to observe that the group of ten states or a *decennium* constitutes one complete *maṇḍala*. The *vijigishu* is the centre of gravity of this sphere. Now each state can have the same legitimate aspiration, that is, each can be fired by the same ambition to form and figure out a sphere of its own. The inevitable result is a conflict of interests, a pandemonium of Siegfrieds united in discord. The problem of statesmen in each state is to find out the methods of neutralizing the policies of others by exploiting the enemies of its rivals in its own interests (*Staatsräson*). The doctrine of *maṇḍala* thus makes of *niti-śāstra* or political science essentially a science of enmity, hatred, espionage and intrigue, as understood by Schmitt and Spengler, and an art of the thousand and one methods of preparedness for "the next war."

We need not go into the details of the *Machtpolitik* conceived in Kauṭalya's *Artha-śāstra* or in the sections on warfare in the *Śukra-niti*.

But it is already clear that the doctrine of *maṇḍala* has launched us at last into *mātsya-nyāya*, the logic of the fish, the Hobbesian law of beasts, anarchy.[1] The doctrine assumes and is prepared for a world of eternally warring states. While "internal" sovereignty dawns as the "logic of the fish" sets, "external" sovereignty postulates the existence of the same logic as a fact in international relations. In one instance *daṇḍa*[2] or punishment, *i.e.* "sanction" of the state, is exercised to crush anarchy, but it is apparently in order to maintain a world-wide anarchy that *daṇḍa* or *Faust-recht* is employed by one state against another. The theory of the state is thus reared on two diametrically opposite conceptions:

1. The doctrine of *daṇḍa*, which puts an end to *mātsya-nyāya* among the *prajā* or members of a single state.

2. The doctrine of *maṇḍala*, which maintains an international *mātsya-nyāya* or the civil war of races in the human family.

From one anarchy, then, the state emerges only to plunge headlong into another. This is the dilemma that pervades the political philosophy of the Hindus. This dilemma of Hindu philosophy is present in Vierkandt, who in *Staat und Gesellschaft der Gegenwart* (1921, p. 10) admits that every state has two faces, one towards the internal affairs, and the other towards the external. It is the *Rechtsstaat* (law-state), *Ordnungsstaat* (state of social order), *lo stato etico* (ethical state), etc., so far as home politics are concerned. But in regard to foreign relations—the politics of boundaries—it is by nature a *Machtsstaat* (force-state) governed by considerations of *Staatnotrecht* (law of state necessity), *Staatsräson* (reasons or requirements of the state).

7. THE DOCTRINE OF SĀRVABHAUMA (WORLD-SOVEREIGN)

The Hindu theory of sovereignty did not stop, however, at the doctrine of a universal *mātsya-nyāya*, *i.e.* of a world in which each state is at war with all. It generated also the concept of universal peace through the establishment of a *Weltherrschaft* as in the French chauvinist Pierre Dubois's *De Recuperazione Terre Sancte* (1307)[3] or in the Italian mystic patriot Dante's *De Monarchia* (I. iv, viii, x). The doctrine of *maṇḍala* as a centrifugal force was counteracted by the centripetal tendencies of the doctrine of *sārvabhauma* (the ruler over the whole earth).

[1] *Kauṭalya*, I. iv; *Kāmandaka*, II. 40.

[2] *Manu*, VII. 20; *Śukra*, I. line 45.

[3] F.J.C. Hearnshaw (editor): *The Social and Political Ideas of Some Great Thinkers of the Middle Ages* (London).

In this theory of the world-state we are presented with the concept of what may be called *Pax Sarvabhaumica*.

In Europe the idea or ideal of a universal empire took most definite shape towards the beginning of the fourteenth century, "exactly when the actual development of the modern nationalities was rendering it practically impossible."[1] This crisis and this transition in Western political thought are best represented in Bartolus (1314-1357),[2] the "prince of jurists," for he began by seeing a single universal empire, but he ended by recognizing a miniature empire in every *de facto* independent power. The same conception of a world sovereignty or a *fédération de l'empire* is however as old in India as the political philosophers of the earliest Vedic period.

"Monarchy at its highest," we read in the *Aitareya Brāhmaṇa* (VIII. iv. 1) "should have an empire extending right up to the natural boundaries; it should be territorially all-embracing up to the very ends uninterrupted, and should constitute and establish one state and administration up to the seas." In their "geopolitical" planning the ancient theorists were evidently thinking of the Indian continent as identical with the entire world. The achievement of a pan-Indian nationality was in their eyes the equivalent of the world federation, just as in medieval European theory the unification of western Christendom was tantamount to the constitution of one state for all mankind, or as in the Eur-American world-peace movements of to-day "the world" is postulated to be the territories inhabited by the albinoes or white races, and "saving civilization" is understood to be the expansion of albinocracy at the cost of Asian and African races.

This theory of a world-nationalism (or, what is the same thing, a United Indianism) exercised a powerful influence on the political speculations of the Hindus. It gave rise to set formulæ and slogans that fired the imaginations of the Alexanders, Charlemagnes and Fredericks of India through the ages. The *Aitareya Brāhmaṇa* (VIII. i. 39) records some of the ambitions and ideals of the Young India of the sixth century B.C. and beyond. "I want to attain to lordship over all rulers," proclaims one aspirant, "I want to achieve the conquest of both space and time... I want to be *sārvabhauma*...and be the *ekarāt* (sole monarch) of the earth up to the skies."

[1] A. J. Carlyle, Vol. III (London, 1915), p. 179. But the concept of the Dantesque universal monarchy is as old as Cicero. See F. Atger: *Histoire des Doctrines du Contrat Social* (Nimes, 1906), p. 26.

[2] C. N. S. Woolf: *Bartolus of Sassoferato* (Cambridge, 1913), pp. 45, 109, 196.

Hindu political thought produced several other categories to express the same idea of the world-state or universal sovereignty. We have, first, the doctrine of *chakravartī*. It indicates that the *chakra* or wheel of the state-chariot rolls everywhere without obstruction. The wheel is the symbol of sovereignty. Or, if *chakra*[1] be taken as denoting a country from sea to sea, the *chakravartī* would be the ruler of a state from sea to sea (*i.e.* extending to the farthest limits). It is this conception of a political "dominion," of a secular overlordship, that is employed metaphorically with a spiritual significance in the conception of the Lord Buddha as *chakravartī*. "A king I am, Sela," says Buddha,[2] using the language of his contemporary imperialists, "the king supreme of righteousness. The royal chariot-wheel in righteousness do I set rolling on—that wheel that no one can turn back."

Secondly, we have the doctrine of *sārvabhauma* expressed in the more popular and conventional conception of *samrāt*. The *Mahābhārata*, for instance, uses this category in order to convey the idea of a world dominion. "There are *rājās* (kings) in every home (state) doing what they like," we read in the Book on *Sabhā* (XV. 2), "but they have not attained to the rank of *samrāt;* for that title is hard to win." And this rank is at last won by Yudhishṭhira in the epic. Yudhishṭhira would thus be the Veltro of Dante's *Divine Comedy*, so to say.

Another category in which the doctrine of *sārvabhauma* is manifest is that of *chāturanta*, of which Kauṭalya (I. v, vii) availed himself in order to establish his ideal of imperial nationalism. The *chāturanta* state is that whose authority extends up to the remotest *antas* (limits) of the *chatur* (four) quarters. The ruler of such a state *ananyām prithivīṁ bhuṁkte* (*i.e.* enjoys the whole earth with none to challenge his might). In the *Artha-śāstra*, he is known also as *chakravartī*, for the territory of such a *chāturanta* is called *chakravarti-kshetra* (dominion of a *chakravartī*).

The *sārvabhauma, chakravartī, samrāt*, or *chāturanta* of Hindu political theory is identical with the *dominus omnium*, or lord of *universitas quœdum* in Bartolus's terminology,[3] the *hwangti* of the Chinese.[4] He is "the monarch of all I survey." He rules a state whose limits extend from sea to sea (*āsamudra-kshitīśa*), and his chariots have free passage up to the skies (*ānāka-ratha-vartman*), as Kālidāsa, the Virgil of

[1] Monier Williams: *Dictionary*.

[2] *Sela-sutta* in *Sutta-nipāta* III. 7. 7; R. S. Hardy: *Manual of Buddhism* (London, 1880), p. 126.

[3] Woolf, pp. 22, 196. [4] Hardy, p. 126.

India, puts it in his *Raghuvaṁśa* ("The House of Raghu"). The pretensions of the doctrine of *sārvabhauma* thus bear close analogy with the universal authority claimed by Pope Hildebrand (*c.* 1075) for the Papacy, or with that rival conception of his opponents, the Ghibelline imperialism of the German Hohenstaufens. Herein is to be perceived the Hindu counterpart of the doctrine, albeit from the monarchical angle, of a single state for entire humanity, the futurist version of which has embodied itself from time to time in diverse forms—in the visions of "permanent peace," or in the pious wishes for a "parliament of man" or for the "League of Nations," or for its antithesis, the communist "Third International" of the proletarian world.

The doctrine of *sārvabhauma* does not stand alone in Hindu political philosophy. It is backed up by several other concepts which may be regarded as its logical feeders. First is the concept of the gradation of rulers in the scale of *aiśvarya* (sovereignty). The *Ṛig-Veda* (IV. xxi. 1), the *Śatapatha Brāhmaṇa* (XI. iii. 2. 1, 6) and other ancient documents recognize a hierarchy or graded rank of states from the lowest unit up. According to the *Aitareya Brāhmaṇa* (VIII. iv. 1) the smallest nationality is a *rājya*. From this rung the ladder gradually takes us through higher or larger "powers" like the *sāmrājya*, *svārājya*, *vairājya* and *māhārājya* up to the greatest power, known as the *ādhipatya*.

Another scale of small nationalities, medium states and great powers is furnished in the following schedule of the *Śukra-nīti* (I, lines 365-374):

Title.		Annual Income in Silver Karsha.[1]
1. *Sāmanta*	... ...	1 to 3 hundred thousand.
2. *Māṇḍalika*	... ...	3 hundred thousand to 1 million.
3. *Rājā*	... ...	1 million to 2 million.
4. *Mahārāja*	... ...	2 million to 5 million.
5. *Svarāt*	... ...	5 million to 10 million.
6. *Samrāt*	... ...	10 million to 100 million.
7. *Virāt*	... ...	100 million to 500 million.
8. *Sārvabhauma*	... ...	500 million and up.

The *sārvabhauma* is further described as being the ruler "to whom the earth with its seven islands is ever bound."

This concept of a scale of nationalities or a rank of states, as "first class powers" or "great powers" and "small nations" or the like,

[1] A little more than 25 cents. in the present United States currency, or roughly approximating to a shilling.

according to income and title, is essentially linked up in Hindu theory with the concept of political *yajñas*, sacrifices and rituals, which are fully described in the *Brāhmaṇas*. The *Gopatha Brāhmaṇa*[1] says that Prajāpati became *rājā* by *rājasūya* sacrifice, *samrāṭ* by *vājapeya*, *svarāṭ* by *aśvamedha*, *virāṭ* by *purushamedha*, and so forth. We need not go into the details of these rituals. We have only to note that not every ruler is entitled to perform any and every sacrifice. Each sacrifice has its own value or mark of sovereignty attached to it, the dignity, might and rank of states being dependent on the character of the sacrifice performed.

According to the *Śatapatha Brāhmaṇa* (V. i. 1, 13), again, the office of the king is the lower and that of the emperor is higher, and therefore one becomes king by offering the *rājasūya*, and by the *vājapeya* one becomes emperor. But the *rājasūya* is known to be the highest sacrifice in the *Taittirīya Brāhmaṇa*,[2] for according to this work, it can be performed only by universal monarchs exercising sovereignty over a large number of princes as the lord of an imperial federation. The *Aitareya Brāhmaṇa* (VIII. 21-23) also says that by virtue of the *rājasūya*, Janamejaya, Śaryāti and ten other rulers "subdued the earth" and became "paramount sovereigns." In the *Āpastamba Śrauta Sūtra* (XX. i. 1), however, *aśvamedha* (horse-killing) sacrifice possesses the greatest dignity, for it can be performed by a *sārvabhauma* (the ruler of the whole earth).

It is obvious that authorities differ as to the relative importance of the political sacrifices, but all are united in the concept that the rituals have a state-value on their face, and that it is the greatest power or the largest nationality alone that is entitled to the highest sacrifice (be it the *rājasūya* or the *aśvamedha*, or what not). The concept of *yajña*, like that of the scale of the states, is therefore an important element in the theory of *Weltherrschaft*, world-monarchy or federated universe embodied in the doctrine of *sārvabhauma*.

Last but not least in importance as a foundation for the doctrine of *sārvabhauma* is the concept of *digvijaya* or conquest of the quarters, of which the *Aitareya Brāhmaṇa* (VIII. iv. 1) speaks. It implies that there is no longer a mere *vijigīshu* or aspirant, awaiting his chance, mewing his might, or watching the conjuncture for "the next war." The Siegfried has already conquered the quarters of the globe, he has factually

[1] Part I, pp. 77, 78, in the *Bibliotheca Indica* Series.

[2] Rajendralal Mitra: *Indo-Aryans* (London, 1881), Vol. II., pp. 2, 3.

realized his highest ambitions. The wheel of his chariot has rolled to the very extremities of the world, and there is none to question his power and prestige. All rival states have been subdued by him. He has brought them to subjection almost in the manner that Napoleon wished when he said in 1804: "There will be no rest in Europe until it is under a single chief, an emperor who shall have kings for officers, who shall distribute kingdoms to his lieutenants and shall make this one king of Italy, that one of Bavaria, this one ruler of Switzerland, that one governor of Holland, each having an office of honour in the imperial household." *Digvijaya* has conferred on the *vijigishu* the chiefship of such a Napoleonic league of nations.

It is under these conditions of a "conquest of the quarters" that the hero of the *Raghuvaṁśa* is authorized to celebrate the *viśvajit* (indicating world subjugation) sacrifice at the end of his Alexandrine exploits. *Digvijaya* brings about a situation in which there is absolutely no scope for the doctrine of *maṇḍala* or international *mātsya-nyāya, i.e.* "geopolitical planning." The world is at peace under the undisputed sway of the lord of the *universitas quædum*, the *sārvabhauma*. The unstable equilibrium of a *vijigishu's* hypothetical *maṇḍala* and survey of the *geopolitische Lage* (geopolitical situation) has given way to the *Pax Sarvabhaumica* established by the *de facto* as well as *de jure* monopoly of world control through *digvijaya*.

A natural concomitant of the concept of *digvijaya* is the idea that the *sārvabhauma* has all the other rulers related to him not as to the *vijigīshu* of a *maṇḍala, i.e.* not as to the ambitious storm-centre of an international complex of geopolitical relations, but bound as to a *rāja-rāja* or king of kings, to whom allegiance is due as overlord. With the rise of the *sārvabhauma*, the *maṇḍala* necessarily disappears. The old order of the "enemy" and the other states has vanished, the new order of the world-state has arisen. An epoch of universal peace has replaced the age of warring nationalities, conflicting *ententes*, armed neutralities, militant attitudes and "geopolitically" planned economies. The doctrine of *sārvabhauma*, as the concept of federal nationalism, imperial federation, or the universe-state, is thus the keystone in the arch of the Hindu theory of sovereignty. The message of *Pax Sarvabhaumica*, in other words, the doctrine of world-unity and international concord is the final contribution of the *nīti-śāstras* to the understanding of the state, and of Hindu philosophy to the political science of mankind.

8. THE DOCTRINE OF RESISTANCE IN HINDU THOUGHT

Radical ideas about the authority of the people occur in the political philosophy of the Hindus. According to Śukra (I, lines 375-376, IV, ii, line 259), "the ruler has been made by Brahmā (the highest God) but a servant of the people, getting his revenue as remuneration. His sovereignty, however, is only for the protection of the people." The king is described as a wage-earner by Baudhāyana in his law-book (I. 10, 18, 1). As a corollary to this notion, the king, like any other public servant or individual in the state, is liable to fines for violation of the law. This is stated categorically by Manu (VIII. 336).

The dignity of the people is adumbrated by Śukra in a most merciless manner. He admits the importance of the office of kingship, but is not prepared to concede any distinction between man and man. Thus, asks he (I, lines 745-746), "does not even the dog look like a king when it has ascended a royal chariot? Is not the king justly regarded as a dog by the poets?" The idea is that the king is as good or as bad as any other human being. There is no extra sacredness in the person of the king.

Śukra does not want to see the majesty of the people converted into a dead letter. So he advises that the king "should dismiss the officer who is accused by one hundred men" (I, line 755). Here is one of the agencies by which public opinion is brought to bear on the state. This is the doctrine of recall in embryo.

The rights and interests of the people are, according to the practice in the *Mahābhārata*, safeguarded by the ministry. It is almost a postulate with all writers on *nīti* that the ministers are the people's representatives and "guardians." They are intended to be a check on the royal power. As Bhāradvāja remarks, they constitute the sole prop of the stae (*Kauṭalya* VIII. i).

Arbitrary monarchy has no place in Śukra's idea of legitimate authority. "The monarch who follows his own will is the cause of miseries and soon gets estranged from his kingdom and alienated from his subjects." The result is a revolution in the state. This can be avoided, according to his advice, if the opinion of a "meeting" or council checks and controls the actions of the king. The wise ruler should, therefore, "abide by the well-thought-out decisions of councillors, office-bearers, subjects and members attending a meeting, never by his own opinions" (II, lines 5-8).

Exclusive government of the one is also unequivocally ruled out of order in the *Matsya Purāṇa* (ccxx. 37), and the *Agni Purāṇa* (ccxv. 18). The king must not decide on the policies as one (*i.e.* quite alone)—*naikastu mantrayen mantram*. The evils of such a rule are described by Kāmandaka (XI. 75), who as a writer of *nīti-śāstra*, is older than Śukra. Even in Kauṭalya's *Artha-śāstra* (I. viii, ix, xv), the Bible of imperialism, the council of ministers is an essential estate of the realm.

Again, according to Śukra, it is not enough that there is a body of ministers in the state. They must be powerful enough to control the king. They must not be merely the "king's men." "Can there be prosperity in a kingdom," he asks, "if there be ministers whom the king does not fear?" And he defines "good ministers" as such persons "whose control the king fears" (II, lines 163-164). Consistent with this idea is the theory that the rejection of the ministers' advice by the king is tantamount to tyranny. "The king who does not listen to the counsels of ministers about things good and bad to him is," we are told, "a thief in the form of a ruler, an exploiter of the people's wealth" (II, lines 515-516).

But the legally constituted council of ministers, "the few," may often fail to bring to bay an arbitrary Charles I. Śukra has discussed such a contingency, and has found in the ultimate power of the people the only solution of such problems. Should the councillors have been browbeaten by the king, "the unity of opinion possessed by the many is more powerful than the king. The rope that is made by a combination of many threads is strong enough to drag the lion" (IV. vii, lines 830-833, 838-839).

Logically, therefore, the Hindu political thinkers have been, as a rule, advocates of active resistance. According to Kauṭalya, the Nemesis of tyranny is expulsion. The *Mahābhārata* (XIII. lxi. 32) justifies regicide on the part of the people (*taṁ hanyuḥ prajāḥ*), if the king is not a "protector" and "leader," but one who "spoils" or ruins and "demolishes" or destroys. According to Manu (VIII. 111, 112), the king who through foolishness tyrannizes over his own state is very soon "deprived of his kingdom and life, together with his kith and kin. As the lives of living beings perish through torture of the body, so the lives of kings also are lost through torturing the kingdom." And the *Śukra-nīti* (II, lines 549-552) is as emphatic as the *Mahābhārata* in its advice to the people regarding the treatment of a tyrant. "If the king is an enemy of virtue, morality, and strength, the people should expel him as the

ruiner of the state." And for the maintenance of the state, " the priest with the consent of the *prakṛiṭis* (the council of ministers) should install one who belongs to his family and is qualified."

9. THE REPUBLICS OF HINDU INDIA

Republics with sovereign authority must have originated very early in India. Some of them survived with complete or modified independence down to the beginnings of the Gupta empire in the fourth century A.C. These are mentioned not only in Buddhist and Jaina records, but also in the Greek and Latin literature on India and Alexander, as well as in the Sanskrit epics and treatises on politics and may to a certain extent be attested by numismatic inscriptions. We need not go into all the epochs. The Hindus of the Vedic age were familiar with republican nationalities. Among the Uttara Kurus and the Uttara Madras the " whole community was consecrated to rulership," in the language of the *Aitareya Brāhmaṇa* (VII. 3. 14).

Republics are described in the *Mahābhārata* (*Śāntiparva*, CVI. 30-32) as invincible states in which the rule of " equality " is observed (*sadṛiśāḥ sarve . . jātyā . . kulena*). " Neither prowess nor cleverness can overthrow them; they can be overthrown by the enemies only through the policy of division and subsidy."

The men who constituted the executive of such kingless polities were called *rājan* or kings. The title reminds one of the impression which the Senate of republican Rome left on the emissaries of Pyrrhus of Epirus. They described it as an " assembly of kings."

During the lifetime of Śākyasiṁha, the Buddha (B.C. 623-543), the Śākyas and the Vajjians were the most important republican clans in the eastern provinces of India. The territory of the Śākya republic covered about fifty miles east to west, and thirty or forty miles southward from the foot of the Himalayas. The population numbered about one million.

The Videhas had at first been monarchical, with jurisdiction over an area twenty-three hundred miles in circumference. But they abolished the regal polity, and joined the Vaiśāli and six other peoples to form the powerful Confederacy of the Vajjians. The administrative and judicial business of the Śākya republic was " carried out in public assembly, at which young and old were alike present, in the common mote-hall. A single chief...was elected as office-holder presiding over the sessions, and if no sessions were sitting, over the state."

In the United States of the Vajjians, "criminal law was administered by a succession of regularly appointed officers." These were the justices, the lawyers, the rehearsers of the law maxims, the council of the representatives of the eight clans, the general, the vice-president, and the president (*rājā*) himself. The accused could be acquitted by each of these officers. But if he was considered guilty, the case had to be referred by the officers to the next in order above them. The final award of the penalty according to the book of precedents was the privilege of the *rājā*.

Buddha himself was a staunch republican in political views. We have the following conversation between him and his disciple, "the venerable Ānanda," in the *Mahā-parinibbāna-suttānta*:[1]

"Have you heard, Ānaṇda, that the Vajjians foregather often and frequent the public meetings of the clans?" "Lord, so I have heard," replied he. "So long, Ānanda," rejoined the Blessed One (Buddha), "as the Vajjians foregather thus often, and frequent the public meetings of their clan, so long may they be expected not to decline but to prosper."

And, in the same manner, questioning Ānanda and receiving a similar reply, the Exalted One declared as follows the other conditions which would ensure the welfare of the Vajjian Confederacy:

"So long, Ānanda, as the Vajjians meet together in concord, and carry out their undertakings in concord...so long as they honour and esteem and revere and support the Vajjian elders...so long may they be expected not to decline but to prosper."

It was not in a quietist's manner that Buddha tried to realize his ideas. He was an active organizer. From the same text we catch a glimpse of his republican propaganda. He says: "When I was once staying...at Vaiśāli, at the Sarandada shrine, I taught the Vajjians these conditions of welfare."

These are three of the "seven conditions of welfare" in the political philosophy of Buddha. And he was militant enough to maintain this republican creed even when pitted against monarchy. Ajātaśatru, the king of Magadha, had been contemplating the annihilation of the Vajjians, "mighty and powerful though they be." But Buddha rose to the height of the occasion and confidently declared: "The Vajjians cannot be overcome by the king of Magadha, *i.e.* not in battle, without diplomacy or breaking their alliance." Did the Athenians have a greater

[1] *Dialogues of the Buddha* (transl. by Rhys Davids), Vol. II.

champion of popular sovereignty in Demosthenes when threatened by the "barbarian" of Macedon?

Coming down to a later period, we find that it was with the powerful military republics that Alexander had to measure his strength in his march through the Punjab and Sindh (B.C. 326).[1] The most important of them were the Āraṭṭas, the Kshudrakas, the Khattiyas, and the Mālavas. The political constitution of the city of Patala, near the apex of the delta of the Indus, was, according to Diodorus, drawn "on the same lines as the Spartan." For, in this community "the command in war vested in two hereditary kings of two different houses, while a council of elders ruled the whole state with paramount authority." The republic of the Āraṭṭas (*Arāshṭrakas, i.e.* kingless) came to the help of Chandragupta Maurya when a few years later he commanded a successful crusade against the Hellenists of the Indian borderland.

The number of republican states during the second half of the fourth century B.C. was large enough to draw the attention of Kauṭalya, the Hindu Bismarck. As these petty popular polities were a nuisance, obstructing the achievement of an all-Indian nationalism, the finance minister advised his master, Chandragupta, to use blood and iron in order to exterminate them. The method of his *Artha-śāstra* is the same as that propounded, about eighteen hundred years later, in the *Prince* of Machiavelli, the first "nationalist" of Europe.

The republics were, however, considered by Kauṭalya (XI) as very valuable assets. "The acquisition of the help of republics (*gaṇa*) is better than the acquisition of an army, an ally, or profits." Before undertaking to destroy them by force of arms, therefore, the would-be *dominus omnium* or *sārvabhauma, i.e.* the imperialist nation-builder, should, says he, make it his duty to win them over to the cause of a unified empire-state. And, of course, as the end justifies the means, Walpolian bribery and corruption might be freely practised. From the impeachment of Aeschines by Demosthenes, as also from the Philippics of the orator, we know that the "Emathian conqueror" liberally availed himself of the Kauṭalyan methods, in order to demoralize and subjugate the free cities of Hellas.

The Hindus and the Hellenes were thus simultaneously marching along the same roads of political experience. And the earliest Asian republics had the same fate as the European. In B.C. 338, Philip crushed the little republic of Greece and founded the Macedonian empire.

[1] McCrindle: *Invasion of India by Alexander* (1896), pp. 296, 406.

A few years later (B.C. 321) Chandragupta founded the first empire of a united India, and became *chakravarti*, *chāturanta*, or *sārvabhauma*, the "lord of *universitas quædum*," to use an expression from Bartolus. The empire swallowed up the lesser monarchies which had reared themselves on the graves of clusters of republican sovereignties.

Let us exclude the Mohenjo Daro sociography from our present survey. The earliest Hindu polity, then, namely, the Vedic, was similar to that with which students of constitutional history are familiar in Homeric literature. It was the tribal (*viś*) organization, based on the autonomy of the self-governing communities.

The nucleus of civic life was the assembly. The same Aryan institution was called *agora* in Greece, *comitia* in Rome, *gemot* among the Saxons, and *sabhā* among the Hindus. This assembly of the whole folk (*viś*) variously called *sabhā*, *samiti*, *saṁsad*, *saṁgati*, etc., was the legislature, as well as the judiciary, nay, the army too. The temper of the people was vehemently democratic; the village, or rather the tribe (*viś*), was the unit of political life; administration was carried on by public discussion; animated speeches must have been a characteristic feature of that society.

In the *Atharva Veda*[1] (*c.* B.C. 1000-800), we listen to an almost modern harangue in the interest of political unity and concord as follows (VI. 64):

"Do ye concur; be ye closely combined; let your minds be concurrent; as the gods of old sat concurrent about their portion.

"Be their counsel the same, their gathering the same, their course the same, their intent alike; I offer for you with the same oblation; do ye enter together into the same thought.

"Be your design the same, your hearts the same, your mind the same that it may be well for you together."

Public speaking was cultivated as an art of political life. Members came to the *sabhā* with speeches well prepared. Success in the assembly was an ambition of life. In the following lines (II. 27) we catch an orator in the green-room, as it were, making himself ready for the debate and praying for victory in it:

"May my foe by no means win the dispute; overpowering, overcoming art thou; smite the dispute of my counter-disputant.

[1] Cf. H. Zimmer: *Altindisches Leben* (Berlin, 1879), pp. 171-174. See Whitney and Lanman's edition of the *Atharva-Veda* (Harvard, U.S.A.).

" Do thou smite the dispute of him, O Indra (God), who vexes us; bless us with abilities, make me superior in the debate."

Within the assembly itself there was keen competition among the members each to carry his own point. Each wanted to win over the whole audience to his way of thinking. Here is a demagogue praying for the effects of an oratorical hypnotism, so to say (VII. 12):

" With whom I shall come together, may he speak to aid me: may I speak what is pleasant among those who come together, O Fathers...

" Whoever are thine assembly-sitters, let them be of like speech with me.

" Of those that sit together I take to myself the splendour, the discernment; of this whole gathering make me, O Indra, possessor of the fortune.

" Your mind that is gone away, that is bound either here or here—that of you we cause to turn hither; in me let your mind rest."

All these debates and deliberations in the assembly were but accessories to the principal end of Vedic life, viz. warfare and annihilation of the enemy. The Hindus of the colonizing period, described in the Vedas, were pre-eminently fighters. Success in arms was the *Leitmotif* of their songs, sports, rituals and ceremonies. And, as in the Teutonic polity, in the Hindu also " war begat the king."

10. THE HINDU KING

We do not have facts relating to the exact historical origin of kingship among the Vedic tribes (*viś*). But the extremely outspoken attitude and the general absence of restraint manifest in some of the " election-hymns " indicate the essential equality and comradeship of the ruler with the ruled. Probably the will of the people had transformed the occasional leader (*heretoga*) for war purposes into the permanent chief or king.

Once instituted, kingship remained elective for a long time. The inauguration of a king " who has been called or chosen " by the people is thus portrayed in the *Atharva-Veda* (III. 4):

" Unto thee hath come the kingdom; with splendour rise forward; (as) lord of the people, sole king bear thou rule; let all the directions call thee, O king; become thou here one for waiting on, for homage.

" Thee let the people choose unto kingship; thee these five divine directions. . .

"Like a human Indra, go thou away; for thou hast concurred in concord with the castes (?); he here hath called thee in his own station...

"The wealthy roads, of manifoldly various forms, all assembling, have made wide room for thee; let them all in concord call thee."

The people not only elected new kings, but sometimes also restored an expelled king against rival claimants. Thus we read (*A.V.* III. 3):

"Thy friends have chosen thee against them; Indra and Agni, all the gods have maintained for thee security in the people.

"Whatever fellow disputes thy call, and whatever outsider—making him go away, O Indra, then do thou reinstate this man here."

It was in such an environment of popular ascendency that the Vedic king had to lord it over the world and lead his hosts, like Agamemnon against Troy, "conquering and to conquer." The all-seeing *sabhā* made it impossible for "the one" to monopolize all the functions of the state. "The few," if not the "many," still controlled the public business, as in the Tacitean *civitas* and the early Greek settlements. Besides, the people had the greatest weapon in their hands—the power of expelling or deposing the king.

Kingship became hereditary in India, as in other countries. But the Vedic right and practice of election were not forgotten in subsequent ages. The tradition is kept up in the *Mahābhārata*. We read in it of the election of Śāntanu as against Devapi, of Pāṇḍu as against Dhritarāshṭra, of Yudhishṭhira as against Duryodhana, etc.

The sovereignty of the people maintained itself not only in the theoretical right of election, but also practically in the elaborate ceremonies which attended the coronation of the king. One of the incidents in the investiture was the *pratijñā*, the vow, promise, or oath, by which the king had to bind himself to the state. The *pratijñā* is thus worded (*Mahābhārata, Śānti*, LIX. 106, 107): "I shall always regard the *bhauma* (country) as the Brahmā (the highest God). And whatever is to be prescribed as law on the basis of statecraft I shall follow without hesitation, never my own sweet will." The coronation-oath thus made the king subordinate to law. It was, in fact, the basis of a *samaya* or compact between him and the people.

The right of election did not become a dead letter in more historical times. In the second century A.C. Rudradāmana was elected to kingship by "all the orders of the people."[1] In the seventh century, Harshavardhana came to the throne through election by ministers and

[1] *Epigraphia Indica* VIII. 43.

magistrates; and the approval of the people was "shown in their songs."[1]

On the latter occasion, Premier Bhandi, "the distinguished," "whose power and reputation were high and of much weight," addressed the assembled ministers thus: "The destiny of the nation is to be fixed to-day. The old king's son is dead, the brother of the prince, however, is humane and affectionate...Because he is strongly attached to the family, the people will trust in him. I propose that he assume royal authority. Let each one give his opinion on the matter whatever he thinks."

During the middle of the eighth century, a commoner was elected king, in the person of Gopāla, who eventually became the founder of the Bengali empire. The people wanted a strong monarch as the panacea for the evils of the "logic of the fish" (*mātsya-nyāya*), which corresponds to Gumplowicz's *Naturprozess* and the Hobbesian "state of nature," *i.e.* anarchy.[2]

II. CONCILIAR ELEMENTS IN HINDU POLITY

Since the establishment of the Maurya empire in India (B.C. 321) and the Tsin empire in China (B.C. 221) the constitutional story of the two countries has been more or less the same. With the fall of the Greek republic (B.C. 338) and later with the conversion of the Roman republic into an empire (B.C. 27), Europe also entered upon the career of despotism, mostly arbitrary and absolute, until it received a strong blow in the English revolution of 1688, and was shaken to its foundations by the French revolution of 1789. But during this period the organs of public opinion were not altogether extinct. In Asia, as in Europe, the voice of the people made itself heard, at least semi-constitutionally, in the affairs of states.

The Vedic *sabhā* seems to have passed through four, not necessarily successive, stages. It may be said rather to have been the prototype of three new administrative bodies.

In the first place, as we have seen, it was a "direct democracy" of the patriarchal type, *i.e.* "with its chief at the head as the permanent executive" or king.

[1] Beal: *Si Yuki* (London, 1888), Vol. I., pp. 210-211.

[2] R. D. Banerji: *Memoir on the Palas of Bengal* (Asiatic Society of Bengal), p. 45; cf. K. P. Jayaswal: "Rituals at Hindu Coronation: Their Constitutional Aspects" (*Modern Review*, Calcutta, January, 1912) and "Introduction to Hindu Polity" (*Mod. Rev.*, May-July, 1913). See also E. W. Hopkins: "The Social and Military Position of the Ruling Caste as Represented by the Sanskrit Epic" (*Journal of the American Oriental Society*, 1889).

Secondly, it was probably such an assembly that constituted the council of the kingless polities. These two types must have flourished side by side for a long time.

Thirdly, with the expansion of the tribe and clan in population and area, the primitive *agora* of the whole folk must have gradually dwindled into the less numerous and hence less democratic council of ministers, *i.e.* the king's assistants or advisers in war and peace. The council of the *witan* in the early English constitution had the same origin and status.

In this third form, the Hindu *sabhā* was a permanent "estate," and served the purposes for which the *Champs de Mars* and the *Champs de Mai* were but occasionally convened by the French kings down to the thirteenth century. This institution was for a long time synchronous with the second and outlived it.

And fourthly, the Vedic *sabhā* may be regarded as persisting all through the ages in the primary units of administration, in the assemblies of the rural communes, the so-called "village communities." Anthropologically, no doubt, these village institutions, no matter whether the lands are owned in common or in severalty, have to be explained as altogether independent growths, as they are distributed almost as widely as mankind, in one form or another. Nevertheless, these folk-moots do not differ in kind from the Teutonic, Homeric and Vedic *civitas*. Logically therefore, if not chronologically, they may be treated as "survivals," so far as administrative (as distinguished from agrarian or economic) history is concerned.

The patriarchal democracy disappeared from India long before the Maurya empire, and probably most of the big sovereign republics were absorbed into it. But the council of ministers and the village community have since then represented the conciliar element in the Hindu constitution.

The ministry was indeed of substantial importance in the polities of India. Not only the semi-mythical "great exemplars," like Rāma and Yudhishṭhira of India, but the historical Charlemagnes and Fredericks of Hindu history also, are known to have been greatly controlled by their ministers. Matters of public law could not be passed by the king alone.

The council of ministers is invariably mentioned as authority along with the king in the royal grants with which we are familiar in Ceylonese inscriptions.[1] Yuan Chwang tells the story of a Hindu minister who succeeded in checking the ultra-philanthropic quixotism of his king. The

[1] *Epigraphia Zeylanica* I. 9; II. 5.

minister argued thus: "Your Majesty indeed will get credit for charity, but your minister will lose the respect of all," because "your treasury will thus be emptied and then fresh imposts will have to be laid, until the resources of the land be also exhausted; then the voice of complaint will be heard and hostility be provoked."[1]

The rural communes of India are well known to students of political institutions as more or less self-sufficient units of local government, through the writings of Henry Maine, though his statements about the "communal" character of land-tenure in the Indian villages can no longer be accepted *in toto*, in the light of recent intensive investigations.

Buddhist evidences furnish us with glimpses into village self-rule for the fifth and sixth centuries B.C. The villagers are known to have united of their own accord to build mote-halls and rest-houses and reservoirs. The repair of roads between their own and adjacent villages as well as the laying out of parks belonged to their civic experience. It is possible also to record that women were proud to bear a part in works of public utility.

South Indian inscriptions of the tenth century indicate that, sometimes, the general assembly of the village was divided into several committees: (1) annual committee, (2) garden committee, (3) tank committee, (4) gold committee, (5) committee of justice, (6) committee for general supervision or some special tax. There was no prohibition against women being members.

The mode of election to the committees may be described as follows: The village with its twelve streets was divided into thirty wards. The number of members was thirty in that instance. Everyone who lived in these wards wrote a name on a ticket. The tickets were first arranged in separate bundles to represent the thirty wards. "Each bundle bore the name to which it belonged. The bundles were then collected and put into a pot and placed before the general body of inhabitants, both young and old, in meeting assembled. All the priests were required to be present. The oldest priest among the present then took the pot, and looking upwards, so as to be seen by all people, called one of the young boys standing close by, who did not know what was inside, to pick out one of the bundles. The tickets in this bundle were then removed to another pot. After it had been well shuffled the boy took one ticket out of this bundle and handed it to an officer called the arbitrator, who

[1] Beal: *Si Yuki* (London, 1888), Vol. I., p. 170.

received it in the palm of his hand with fingers open. He read out the name, and it was then shouted out by the priests."[1]

The rural communes have lived on till modern times, enjoying greater or less autonomy according to the degree of centralization achieved by the rulers of successive ages. "The townships remain entire," says Elphinstone, "and are the indestructible atoms, from the aggregate of which the most extensive Indian empires are composed." He quotes Metcalfe's report: "They seem to last where nothing else lasts. Dynasty after dynasty tumbles down; revolution succeeds to revolution...but the village communities remain the same." Village communities are, however, nothing exclusively or characteristically Indian or Oriental. In Europe also, nay, in Britain, they have played a very important rôle in economic, political and social life.[2]

12. LAISSEZ FAIRE AND UNIFICATION

Like the Byzantine, Carlovingian and Hapsburg empires of Europe, and like the Tang, Ming and other Chinese empires, the Maurya, Gupta, and Moghul empires of India were, except for short intervals, mere apologies for empires, if we strictly apply to them the test of Austinian sovereignty. These *Weltherrschaften* were really the nurseries of "home-rule," provincial autonomy, and local self-government.

It should not be surmised, however, that strong centripetal forces were wanting in India. From Sanskrit and Pali sources we learn that the conception of pan-Indian nationality and *fédération de l'empire* was the permanent source of inspiration to all "aspirants" (*vijigishu*) to the position of the *chakravarti* or the *sārvabhauma*, *i.e.* the *dominus omnium* of Bartolus. And more than one Indian Napoleon succeeded in giving a unified administration, financial as well as judicial, to extensive provinces in Hindustan.

Organization in India under the *sārvabhauma* or *chakravarti* emperors was no less thorough than in China under the Manchus. The census department of the Maurya empire, as described by Megasthenes and Kauṭalya, was a permanent institution. It numbered the whole population as well as the entire live-stock, both rural and urban. Causes of immigration and emigration were found out. Managers of charitable

[1] *Madras Epigraphy*, 1909-1910 p. 98; J. Matthai: *Village Government in British India* (London, 1915), pp. 25-30.

[2] Cf. G. L. Gomme: *Primitive Folkmoots* (London, 1880), *Village Community* (London, 1890), *Principles of Local Government* (London, 1897).

institutions were required to send information to the census officers. Merchants, artisans, physicians, etc., had also to make reports to the officers in charge of the capital, regarding people violating the laws of commerce, sanitation, etc.[1]

The centralization manifest in the collection of vital statistics marked every department of governmental machinery. The central government bestowed attention upon the question of irrigation even in the most remote provinces. For instance, Girnar is situated close to the Arabian Sea, at a distance of at least 1000 miles from the Maurya capital (Pāṭaliputra, on the Ganges, in Eastern India, the site of modern Patna). But the needs of the local farmers did not escape the imperial notice. It is an open question if imperialism was ever more effective in any period of European history.

Chandragupta and Aśoka's highest court of judicature might have served to be the model for the *Parlement* of Paris, first organized in the thirteenth century by Louis IX. The judicial hierarchy of the traditional law-books was equally well centralized. "A case tried in the village assembly goes on appeal to the city court," as we read in Nārada's *Smṛiti* (I. 11), "and the one tried in the city court goes on appeal to the king."

In Moghul India, land revenue was assessed on a uniform basis of measurement. The France of Louis XIV, though about one-third of the contemporary Indian empire, did not possess this uniformity, in spite of the centralizing ambitions and exploits of the *grand monarque*. On the eve of the French Revolution there were about three hundred and sixty distinct bodies of law in force, sometimes throughout a whole province, sometimes in a much smaller area.[2] The administrative homogeneity of Moghul India was to no small extent brought about by the construction of roads which were maintained at a high level of excellence, both for commercial and military purposes. Tavernier, the French merchant, found travelling in India in the seventeenth century "more commodious than anything that had been invented for ease in France or Italy." As road-makers the Moghuls had been preceded by the great Cholas of South India and the Mauryas of the North.

But communication, conveyance, transmission of messages, transfer of officers, etc., howsoever efficiently managed, could not by any means cope with the area and the population, except for short periods under

[1] N. N. Law: *Studies in Ancient Hindu Polity* (London, 1914), pp. 117-121.

[2] *Cambridge Modern History*, Vol. VIII., Ch. ii, p. 49.

masterful organizers. The "absolute limit" of imperialism was offered by the extent of territory and similar natural hindrances. Even the best conceived organs of unification could not, under the circumstances, permanently withstand the tendencies to centrifugal disruption. No political organism of a tolerably large size could therefore possibly endure, either in the East or the West. It is not a special vice of the Orient, as has been alleged, that the empires were ephemeral and that the kingdoms were in a "state of nature." Rather, on the basis of comparative history, it has to be admitted that if the territorial limits and the duration of "effective" imperialism be carefully remembered, the Oriental administrators would not yield the palm either to the Romans or to the Franks and the Hapsburgs who prolonged the continuity of the Augustan empire by "legal fiction."

A consolidated empire worthy of the name, *i.e.* one in which influences radiate from a common centre as the sun of the administrative system, could not be a normal phenomenon anywhere on earth before the era of steam and the industrial revolution. It is this fundamental influence of physics on politics that, more than any other single cause, forced the ancient and medieval empires of the world to remain but bundles of states, loose conglomerations of almost independent nationalities, *Staatenbunden*, cemented with the dilutest mixture of political blood.

"Regional independence" was thus the very life of that "geo-political" system in Asia as in Europe. It was the privilege into which the provincial governors, the *Markgrafen*, the local chiefs and the aldermen of rural communes were born. Their dependence on their immediate superior consisted chiefly in payment of annual tribute and in occasional military service. They had to be practically "let alone" in their own "platoons." Even the strongest "universal monarchs," such as Shi Hwang-ti, Han Wu-ti, Tang Tai-tsung, Manchu Kanghi, Chandragupta Maurya, Samudragupta, Akbar and Shivaji, could not but have recourse to a general policy of *laissez faire*, specially in view of the fact that each of them had to administer a territory greater in size than the Napoleonic empire at its height.

It is already clear, at any rate, that the nineteenth century generalization about the Orient as the land exclusively of despotism, and as the only home of despotism, must be abandoned by students of political science and sociology. It is high time, therefore, that comparative politics, so far as the parallel study of Asian and Eur-American institutions and theories is considered, should be rescued from the elementary

and unscientific, as well as, in many instances, unfair notions prevalent since the days of Maine and Max Müller. What is required is, first, a more intensive study of the Orient, and secondly, a more honest presentation of Occidental laws and constitutions, from Lycurgus and Solon to Frederick the Great and the successors of Louis XIV. In other words, political science and sociology are eminently in need of a reform in the comparative method itself.[1]

[1] B. K. Sarkar: "The Hindu View of Life" (*Open Court*, Chicago, August, 1919). "La Démocratie hindoue" (*Séances et Travaux de l'Académie des Sciences Morales et Politiques*, Paris, July-August, 1921), *The Futurism of Young Asia* (Berlin, 1922), *Die Lebensanschauung des Inders* (Leipzig, 1923), *The Positive Background of Hindu Sociology* (Allahabad), Vol. II. (1926), and "Istituzioni Politiche Sociali dell' Antico Popolo Indiano" (*Annali di Economia*, Milan, 1930).

INDIA TO-DAY AND THE EQUATIONS OF COMPARATIVE INDUSTRIALISM AND CULTURE HISTORY

CURRENT TENDENCIES IN INDIAN LIFE AND THOUGHT

With the new Government of India Act (1935) we are at the threshold of a cultural and social reconstruction. The contributions made by Indian scholars in recent years to the diverse branches of science and learning should encourage us to invest more of our idealism, energy and resources in research and investigation. Attention may be drawn, among other things, to the growing number of publications, for instance, by Indian medical practitioners and researchers in the *British Medical Journal, the Lancet*, the *Transactions of the Royal Society of Tropical Medicine and Hygiene* and other European and American journals. We cannot ignore in this connection the fact that journals like the *Indian Medical Gazette*, the *Indian Journal of Medical Research* and the *Journal of the Indian Medical Association* indicate the large amount of original work in medical science for which Indian talent is responsible.

This is a new sign of the times, the spirit of research among Indian scholars. Even a few years ago Indians were hardly known in the world of modern culture as original thinkers and contributors. To-day we find that every year there is some Indian author or artist—man of science, philosophy or antiquities—who is visiting Europe, America and Japan and taking part in teaching, lecturing or discussion at first class institutes of learning or international congresses. The scholars of India are at present making a mark in all sciences from anthropology to zoology. This fact is to be stressed not only as an item of inspiration to the younger generation of our men and women, but also as a piece of solid information for our elders, the educators, statesmen and publicists, nay, for the larger world in Asia as well as Eur-America.

The world to-day is being enriched by India's creative work in the arts and sciences. It is becoming more and more dependent on India's brains and exertions. India's claims to the world's recognition are thereby getting more and more justified. What India needs to-day is a more systematic and strenuous pursuit of the paths that she has been following. The post-graduate studies in Indian universities have vindicated themselves. It is time to render them more efficient and heighten their standard. Nor is it less important to think of making

them accessible to larger classes of students. Higher education ought not to remain a mere luxury of the well-to-do. India will have to find the means in order to democratize it as much as possible, both from the economic standpoint as well as from that of the diverse races.

We must not in any case minimize the progress that has already been achieved in India. The horizon of the Indian *intelligentsia* has been widened by the all-India Congresses and Conferences of the university-men, such as are being held at different academic centres in regular succession. The work of the Inter-university Board as an agency in what may be described as " rationalization " in Indian academic life has also been noteworthy. A more direct and continuous contact between the different limbs of the Indian academic organism should now be attempted, for instance, by the regular exchange of students between Mysore and Lahore, Calcutta and Bombay, Osmania and Benares, Aligarh and Madras. The exchange of professors also between the diverse academic regions has been a desideratum for quite a long time.

The exchange may likewise be attempted with centres outside the Indian lands and waters. The British students who came out on debating tours were met on friendly terms by Indian students. The movement deserves careful and scientific nursing from the Indian side. In Germany and Italy organizations of high academic rank, e.g. the *Deutsche Akademie* (Munich) and *Istituto Italiano per il Medio ed Estremo Oriente* (Rome)—have been established with the object of coming into direct cultural and educational intercourse with the Indian seats of learning. The academic bodies of India ought to treat these friendly gestures from overseas as another new sign of the times and come forward to co-operate with the Continental and other foreign universities and academic bodies by returning in some suitable manner the courtesies offered by the latter to Indian professors and students. Thanks to the system of Readership lectures the University of Calcutta is in a position to invite once in a while eminent scholars from abroad for short public courses. But perhaps something more effective than these public lectures will have to be promoted in the near future in the interest of a really substantial impact on Indian scholarship from foreign sources.

While dealing with the subject of academic reconstruction, let us touch on an important branch of discipline which has become well established in recent years. We are thinking of " Indology." For a long time Indology has meant in India as in Europe and America—and

indeed in India because of the tradition in the Western world—the cultivation of *ancient* Sanskrit, Prākṛit and Pāli as well as Arabic and Persian. Modernists cannot afford to permit this interpretation of Indology to continue in the future. It is certainly desirable that the philological, literary and cultural study of old documents in these languages should advance. One will, besides, have to admit that the researches about ancient and medieval India based on the evidences of these Oriental languages have constituted a special feature of Indian scholarship in recent years. But this interpretation of Indology as a study exclusively of ancient things should not be allowed to persist for any length of time.

Indology must include the studies and researches in modern India also and therefore in modern Indian languages as well. The claims of the modern Indian languages—Bengali, Hindi, Urdu, Marathi, Gujarati, Tamil, Telugu, Kanarese and Malayalam—should not be treated as of secondary importance in philological, historical or sociological studies. Modern and contemporary India deserves to be studied with at least as much enthusiasm and as much literary and linguistic equipment as ancient and medieval India. And from this standpoint it is necessary and desirable to cultivate a new orientation to the modern Indian languages. We should organize ourselves to utilize the modern languages of India as indispensable aids to every research about the economic, social, political and cultural developments of modern India. The Department of Indian Vernaculars at the Calcutta University has made important contributions in this field. Anthropology, literature, sociology and modern history are being enriched on account of the contacts of specialists with the researches in the Indian vernaculars. But the work has to be conducted in a more conscious and systematic manner.

We should not ignore a very important consideration in this connection, namely, that the Bengali language is going to be made the medium of instruction at the Matriculation of the Calcutta University, as Urdu has always been at the Osmania. This is the result of a long-standing nationalist agitation since the National Education Movement in Bengal associated with the "ideas of 1905." It is a move in the right direction and deserves to be followed up everywhere. But what we are pleading for the vernaculars at the present moment is a more extensive appreciation by scholars, in all fields bearing on modern India, of the importance to be attached to the languages and literatures of to-day as the sources of information about the varied phases of contemporary life.

In regard to the physique of the rising generations as well as the promotion of hygienic habits, the schools and colleges have been playing an important rôle. We need not be believers in the now very popular feats of muscular demonstration as examples of gymnastic prodigy. Such exhibitions of physical strength and endurance may have a scenic value and will always be enjoyed by people who want spectacular shows during hours of leisure. But the interest in physical health and vigour ought to take a different turn. There is throughout India to-day a remarkable emergence of enthusiasm for physical training in the interest of health and efficiency. The people as well as the Government have been exhibiting their keenness on this health movement. Sports and games, football, cricket, hockey, tennis, long distance excursions on foot, cycling and motoring, swimming and rowing have been taken up by young men in right earnest. The University of Calcutta maintains a Student Welfare Department where the health and physical stamina of young intellectuals are attended to in a scientific manner. All this indicates that what is known as the "youth movement" in Europe is also represented in India, although on a very modest scale.

While dealing with the new forces in the life and habits of Young India we cannot refrain from referring to a very important item in the social life of the young academicians. We are speaking of their great delight in amateur theatrical performances. School and college functions, especially in Bengal, are invariably attended with these plays, very often improvised for the occasion. These exercises of the youngsters in music and play have proved to be not only genuine sources of recreation and entertainment, but valuable assets in the literary and artistic life of the Bengali people.

Altogether one should have to admit that India has been advancing along right lines. Only, the rate of our advance requires to be quickened. And our national endeavours should be directed towards rendering all this advance as universal and country-wide as possible. Of late the Moslems have been putting forth laudable efforts to assimilate modern science and culture on a somewhat mentionable scale. The measures in behalf of the depressed classes in order to raise them to a higher cultural, economic and political status are also to be appreciated as activities calculated to bring the most diverse sections of the Indian people within a common orbit of progressive and liberal tendencies. Our aim should always be in the direction of helping forward the democratization of learning, culture, and efficiency among all our races, tribes, castes,

religions and regions. It should be a part of Indian political statesmanship also to hasten the progress of India along these lines of race-uplift and caste-uplift.

TECHNOCRACY AND CAPITALISM IN INDIA[1]

As long as unemployment stares the "middle classes" in the face and economic depression continues to dominate India and the rest of the world, it would be unreasonable to be too optimistic in the Ramakrishna Centenary Volume that is being prepared in 1936. But luckily the world-economic depression has commenced retreating inch by inch. It is gratifying to have to observe that in the process of reconstruction the Ottawa Agreement has already exhibited the potentialities of a beneficent agency. There were misgivings in many quarters, both theoretical and commercial. But the facts and figures have made it clear that the Imperial preferences have not proved detrimental to any Indian industry. The fact that the industrialization of India, which we take delight in describing as the *Swadeshi* Movement, is not likely to be hampered as

[1] See the present writer's "Die Industrialisierung Indiens" (V.D.I. *Nachrichten*, Berlin, 1924), *Economic Development* (Madras, 1926), "Aspetti e Problemi della Moderna Economia Indiana" (*Annali di Economia*, Milan, 1930), *Die Entwicklung und weltwirtschaftliche Bedeutung des modernen Indien* (Stuttgart, 1931), *Applied Economics*, Vol. I (Calcutta, 1932), *Nayā Bānglār Goḍā Pattan* (The Foundations of a New Bengal), Calcutta, 2 vols. (1932), *Indian Currency and Reserve Bank Problems* (Calcutta, 1934), *Imperial Preference vis-à-vis World-Economy* (Calcutta, 1934), *Social Insurance Legislation and Statistics* (Calcutta, 1936). See also *Statistical Abstract for British India*, *Large Industrial Establishments in India*, *Joint Stock Companies in British India and Indian States*, *Review of Agricultural Operations in India*, *Annual Reports of the Chief Inspector of Mines*, *Reports of the Controller of Currency*, *Indian Insurance Year-Book*, *Statistical Tables Relating to Banks in India*, all Government publications.

Consult M. G. Ranade: *Essays in Indian Economics* (1898, 1906), R. C. Dutt: *Economic History of British India* (1901-03), S. C. Mukerjee: "Principles of the Swadeshi Movement" (The *Dawn*, Calcutta, 1905), D. E. Wacha: *Life and Work of J. N. Tata* (1918), L. Fraser: *Iron and Steel in India* (1919), R. K. Das: *Labour Movement in India* (Berlin, 1923), J. C. Coyajee: *India's Fiscal Problems* (1924) and *Indian Currency System* (1931), D. R. Gadgil: *The Industrial Evolution of India in Recent Times* (1924), P. P. Pillai: *Economic Conditions in India* (1925), P. A. Wadia and G. N. Joshi: *Money and the Money Market in India* (1926), Vakil and Muranjan: *Currency and Prices in India* (1927), Mehta and Subhaya: *The Co-operative Movement in India* (1927), S. C. Ghosh: *The Organization of Railways* (1927), B. Narain: *Eighty Years of Punjab Food Prices* (1927), L. C. Jain: *Indigenous Banking in India* (1929), K. T. Shah: *Federal Finance in India* (1929), N. Sanyal: *Development of Indian Railways* (1930), J. Hasan: "The Labourers and the Problem of the Standard of Living in India" (*Indian Journal of Economics*, 1932), V. G. Kale: *India's National Finance Since 1921* (1932), R. K. Mukerjee: *Land Problems of India* (1933), S. C. Dutt: *Conflicting Tendencies in Indian Economic Thought* (1934).

a consequence of the Ottawa Agreement, should prove to be a source of great encouragement to many. No less important is the consideration that the prices of goods have not risen on account of this arrangement. We understand, further, that the Indian revenues have not been adversely affected. The most valuable consideration from certain standpoints is perhaps the conclusion that the exports of India have a chance of steady expansion. This means that the agricultural classes of Bengal as of other parts of India can look forward to a period of relative prosperity.

In the atmosphere of intellectuals we are indeed interested chiefly in the propagation of knowledge and the promotion of research as well as originality and leadership among scholars. But we cannot be blind to the measures such as are expected to add to the purchasing power of India's peasants and improve, however slightly, their standard of living.

The interests of cultivators lie nearest to the hearts not only of the people and publicists, but also of the Government of India and the Indian Princes and administrators throughout the Indian sub-continent. All constructive nationalists and patriotic social servants are fully aware of this. We should like to suggest that the problems of cultivators and agricultural indebtedness ought to demand the serious attention of the academic bodies, professors and students alike. The progress of co-operative credit societies is well known. But it is only short-period credits that can be offered by the co-operative credit societies as constituted at present. In order that agricultural improvements may be taken in hand—especially such as involve a good few years—what the cultivators require in the line of finance is a long-period credit. It is time that the co-operative departments throughout India expand their functions by taking up the problems of long and intermediate credits. In France the co-operative system is elaborately developed. French agriculturists do not have to remain content with mere short-period credits. They can get loans for ten years. The period may be extended to twenty-five years also. It is to be doubted, however, whether such radical expansions of the co-operative credit system will be feasible in India at the present stage.

It is, however, noteworthy that the Governments in India have been initiating a new type of banks for cultivators, namely, the hypothec or land-mortgage banks. These were badly needed. It is on the security of land mortgaged by the landlords or tenants that credit can be offered by the land-mortgage banks. As a rule, fifty to sixty per cent. of the

value of the land can be rendered available to the borrower. He becomes also a shareholder of the bank by buying a number of shares. And in order to furnish themselves with money the land-mortgage banks can issue debentures, generally twenty times the value of the share capital. The experiences of the Federal Farm Loan system of the U.S.A. as well as of the Hypothec Bank of Japan ought to be very instructive in this regard.

In this connection the establishment of the Reserve Bank should prove to be beneficial to cultivators. India has fought quite a strenuous fight over this institution. But now that this central bank has become a reality, it is to be trusted that a strong foundation of economic stability and financial rationalization will be furnished thereby. As the ordinary functions of commercial banks lie outside the scope of this institution, the currency and credit problems of India may be expected to be cared for in a sound manner. India has at last initiated an institution which, like the Bank of England, the mother of central banks throughout the world, or like the Reichsbank of Germany, which in the midst of political vicissitudes has continued to function according to strict banking principles, will serve to place the financial and economic structure of India on autonomous, up-to-date and advanced lines. While admitting all this, we should not fail to impress upon our scholars and publicists the importance of looking upon the Reserve Bank through the agriculturist's eyes. It should be the concern of the public men, economic experts and directors to utilize this instrument in such a manner that substantial loans and grants at favourable rates may be rendered available for the co-operative credit societies, land-mortgage banks, etc., such as are directly interested in the welfare of cultivators.

Villages, peasants, handicrafts and cottage industries constitute indeed the dominant feature of Indian economic and social life—even in 1936. But Indian statesmen and economists cannot afford to ignore or belittle the immense growth of large and medium industries as well as the concentration of men and women in towns such as characterize the Indian society of to-day. Machines, industrialization, factories as well as urbanization, expansion of cities, etc., in other words, technocracy as well as capitalism have come to stay. The Indian *intelligentsia* cannot therefore fight shy of the problems of industrialism and city life. It would not do in season and out of season to idealize the virtues of village life and the blessings of agricultural civilization. The atmosphere of academic teaching and research and cultural life generally will have to

be adequately adapted to the new conditions of the social environment and economic organization.

The problems of the industrial worker, the colliery labourer, the railwaymen, the plantation cooly and the factory hand ought to be implanted in the intellectual and moral consciousness of the world of culture. At the Tenth All-India Medical Conference held at Bombay in December, 1933, the Central Council of Indian Medical Association in collaboration with the Standing Committee of the All-India Medical Licentiates' Association has drawn up a scheme of national health insurance on the lines of similar schemes in Germany, Great Britain and other countries. The subject is bound sooner or later to acquire prominence in the economic life as well as legislative activity of India. This is a field in which the medical man, the lawyer, the economist, the sociologist, and the social service worker like the members of the Ramakrishna Mission, can all work together on a common platform harnessed to the promotion of national efficiency and welfare.

Just at present India does not possess anything in this line more substantial than the Maternity Benefit Acts of Bombay and the Central Provinces. In regard to the vital questions bearing on the labourer's safety, the Workman's Compensation Act, especially in its enlarged form, bids fair to be an important landmark in Indian social legislation. But altogether the entire subject of labour protection in India demands careful thinking over both from the point of view of the employee and of the employer. No topic should deserve more attention in Indian public life as a subject for research than the question of social assurance. The League of Nations has been serving as the friend of all and sundry by issuing valuable publications on the diverse branches of assurance as applicable to the working classes. A part of the idealism and research activities of the Indian *intelligentsia* ought certainly to be directed to the analysis and assimilation of the fine documents published by the League.

In connection with the labour problems and labour economics the Servants of India Society established by G. K. Gokhale at Poona (1905) has been functioning as an important centre of investigation. Under N. M. Joshi's guidance Bombay, nay, all India is to-day furnished with expert counsel in regard to labour legislation and movement.

It would not be correct either to describe India as a purely agricultural sub-continent or to forecast her future sustaining power exclusively on the strength of her mechanical and biological progress in

agriculture.[1] Slowly but steadily India has been growing into an industrial region also. In 1913-14 the total production of cotton piece-goods in Indian mills was 1,164,300,000 yards. In 1933-34 it was 2,945,000,000 yards. The increase was 153 per cent. in twenty years. During the same period the censused population rose from 315 millions to 352 millions only.

Even during the so-called depression period (since 1929) the indices of industrialization in India have been quite noteworthy. With 1928=100 the index of production in the cotton mills of India rose to 141 in October, 1933. In the output of steel the index rose during the same period to 175. It is worth while to observe that at the present moment (July, 1936), a number of new steel mills are nearing completion or under project. The total capacity of steel output in India is likely to be just the double of the present in a few years, rising up to, say, a million tons.

In 1913-14 India imported iron and steel goods to the extent of 1,018,000 tons. The weight of these imports rose to 1,169,000 tons in the pre-depression year. The pre-war average of imports in the line of *Produktionsmittel* (means or instruments of production), namely, machinery, mill-work, etc., was valued at Rs. 56,114,000. In the pre-depression year the value of this class of imports, calculated as it is to promote industrialization, rose to Rs. 183,604,000.

In the pre-war year (1913-14) the export of manufactures from India constituted 23 per cent. of her total exports. In 1933-34, *i.e.* at the end of the so-called depression period, it was 27.2 per cent. The growth of India as a manufacturing or industrialized region is self-evident.

During the last few years India has been absorbing larger and larger quantities of metal, hardware, motor cars, etc. The increasing trends in industrialization are marked features of the depression period. The production of electric lamps and all kinds of electrical apparatuses, rubber tyres, water softening plant, cooking stoves, asbestos, cement products, paints, enamels, etc., as well as railway rolling stock, bridge work and other heavy structures points likewise to the expansion of industrialism. Last but not least ought to be mentioned the fact that the whole of the sugar that India used to import from Java is now being produced in Indian mills.

[1] *Review of the Trade of India 1928-29* (Calcutta), pp. 150, 151, 200-203; *1933-34* (Delhi), pp. 98, 179, 228-231; *Budget for 1934-35* (Delhi, 1934), pp. 39, 230-231; *Census of India 1931*, Vol. I. (Delhi, 1933), pp. 5, 37, 55-59.

The spirit of Tata is abroad and Tataism has come to stay. The "tonic of machinery" has commenced functioning in an unmistakable manner. To-day the Indian people is not only importing and consuming tools, implements, machinery, etc., as, say, previous to the war of 1914-18, but is actually manufacturing them at home. The production of the *Produktionsmittel* is a mentionable feature in the industrial economy and technocracy of creative India at the present moment. The review for the year 1934-35 enables us to understand that industrial and domestic utility machinery such as litho-printing machines, paper perforators, tablet making machines, pulverizers, sewing machines, sanitary equipment and hospital requisites are being manufactured in India.

The progress of industrialization can be watched even in regions like Bengal which in the main is known to be agricultural in economic morphology. While one watches the expansion and improvements of the metropolis, Calcutta, one should not ignore the economic and social changes that have come upon Jalpaiguri, Serajganj, Narayanganj, Kharagpur, Chittagong, and other areas. During the last quarter of a century all these places have grown considerably, first, as "ports," secondly, as industrial centres, and thirdly, as commercial emporia for agricultural produce and manufactured goods. This growth has made itself felt in the houses, roads, waterworks, schools, hospitals, motor conveyances, engineering repair stations, etc., of the *Mofussil*. These items indicate not only transformations in the economic and social conditions of the people, but at the same time some rise in the standard of living of the peasants and "middle classes." The rate of this rise is certainly not high, but it is perceptible.

One of the main factors in the industrialization of Bengal is the jute crop. Bengal has naturally grown in acreage under jute. But the rate of expansion in jute *manufacture* has been higher than that of expansion in jute *cultivation*. And in foreign countries Bengal is known no less as an exporter of manufactured jute than of raw jute.

The expansion of capitalism is manifest in the amount of transactions conducted by the banking institutions including the savings banks as well as the "individual bankers." The progress of the insurance companies also during the last three decades furnishes another testimony to the growth of capital available for investment. In both these instances we have to visualize institutions run not only by foreigners but by Indians as well.

It is possible to discover some changes in the social structure such as have been generated on account of the progress of capitalism, especially in and through the insurance companies. To-day in every province of India there are in evidence thousands of insurance agents, and they constitute a class by themselves in the occupational morphology of the sub-continent. Like the *zamindars*[1] (landholders) who owe their status and position to the political revolution of the latter half of the eighteenth century ("Permanent Settlement," 1793), and the lawyer-schoolmaster-medical doctor group that has come into prominence on account of the cultural revolution and modernization movements of the middle of the nineteenth century (Calcutta University, 1856), the insurance agents embody the processes and consequences of the industrial revolution or transformation that has been going on in the twentieth century.

As a new socio-economic group or professional class the insurance agents, in so far as the life branch is concerned, have succeeded in popularizing among the Hindus, and to a certain extent among the Mussalmans, the idea of making provision for widows, orphans and old age. Their services in this regard have amounted in practical life to more than what tons of literature on social reform could produce in India during the last century.

INDIAN ECONOMY VIS-À-VIS WEST-EUROPEAN ECONOMY

Notwithstanding the divergences of latitude and longitude and notwithstanding the differences in the make-up of the blood among the different races, anthropology as well as modern and contemporary history furnishes us with what may be described as equations or identities and at any rate similarities in the ideals as well as technical and other attainments of the historic nations of the world.

It is necessary at this stage to invite the attention of scholars to some of these equations in the field of economic life and civilization. In place of the traditional ideas regarding racial and geographical differences in the so-called types of culture, we are presented with differences or distances in time only. The fundamental features of civilization, pragmatically considered, are found to be the same in the different peoples. It is only proceeding step by step, or rather stage by stage, from epoch to epoch: the differences between the peoples are but differences in the stage or epoch. The equations that are being established here reveal but the distinctions between earlier and later, go-ahead and backward

[1] P. K. Mukerjee: *The Economic Services of Zamindars to the Peasants and the Public as Analyzed by Benoy Sarkar* (Calcutta, 1934).

peoples. The same features are appearing to-day in one race or region, to-morrow in a second, and the day after to-morrow in a third.

The " curves " of life in economic or political theory and practice as manifest in the modern East are more or less similar to those in the modern West. If one were to plot out these curves diagrammatically, one would notice that the Asian series ran almost parallel to the Eur-American. The " trends " of evolution would appear to be nearly identical in the most significant particulars and incidents of thought and experience.

The " exactness " of the mathematical and " positive " sciences, is, however, not to be expected in the human and moral disciplines. But certain socio-philosophical " equations " may still be discovered in a comparative estimate of the East and the West. By placing the Asian curves in the perspective of the Eur-American one might establish a number of identities for the modern period—although, of course, not without ' buts ' and ' ifs.'

But, in any case, taking Asia as a whole one would come to the conclusion that the economic, political and social philosophies and endeavours in the different regions of the Orient are mainly but repetitions of Eur-American developments in their earlier stages. The following socio-philosophical as well as economico-technocratic equations may be established on the strength of positive data:

(1) New Asia (*c.* 1880-1890) = Modern Eur-America (*c.* 1776-1832).

(2) Young India (*c.* 1930-35) = Eur-America (*c.* 1848-1870).

In the first equation, Asia comprises Turkey and Egypt, indicating that the entire Orient from Tokio to Cairo was witnessing a technical and social transformation roughly corresponding to the remaking of the West during the epoch of the " Industrial Revolution."

The second equation has special reference to India, indicating that Japan and Turkey as well as China, Persia and Egypt will have to be comprehended by separate, perhaps five different equations. There are likewise to be separate equations not only for Hedjaz, Palestine, Syria and Iraq, but also for Afghanistan, which has for some time been enjoying limelight as a somewhat serious and sincere youngster attempting the alphabet of modernism in technocracy, administration, economic life and general culture.

The modern East is about two generations behind the modern West in technocracy and socio-economic polity. New Asia is born through

(1) contact with and example of modern Western progress, (2) industrialization, however slow and halting, and (3) dislike of foreign domination, intervention or concession.

The inspiration derived from the economic, political and cultural achievements of ancient and medieval Asia is another formative force in the New Orient. This "romantic" appreciation of the past is, however, intimately associated with modern historical, archæological and anthropological scholarship. Nationalism, in so far as it is an aspect of romanticism, is ultimately to be traced, therefore, in the main to Western education such as began to bear fruit—among the pioneers of new life and thought in Asia—between 1850 and 1886 and has been more or less democratized, filtering down to the masses since them.

The process of Asia's rebirth may be said to have begun *c.* 1850 and taken about one generation or so, thus:

1. Western Asia (Turkey, Egypt and Persia): 1857 (Crimean War) to 1876, 1882, 1890.
2. Southern Asia (India): 1857 (Mutiny) to 1886.
3. Japan: 1853 (Commodore Perry) to 1867-1889.
4. China: 1842 (Nanking Treaty) to 1898.

Although modernization began to influence the Asian continent at different points more or less simultaneously during the decade from 1880 to 1890, the rate of growth for different regions since then has been different.

For instance, the distance of some fifty years that existed between Japan and Eur-America, say, about 1886, has been made up to a very considerable extent; so that for to-day the appropriate economico-sociological identity would perhaps be indicated by the following equation:

Japan (*c.* 1930-35) = Eur-America (*c.* 1910).

That is, while India continues still to be some two generations or so behind the modern West in industrialism, constitution, social legislation, etc., and the allied philosophies—the distance that existed during the decade 1880-1890—Japan has succeeded in "catching up to" the go-aheads by more than a generation. And to that extent Japan to-day is ahead of contemporary India.

It is not the place here to go into details about the technocratic and economic transformations of the world. But these transformations may be indicated in four successive periods beginning with the new conquests of technocracy in which England commenced pioneering the world about 1760-85. The following scheme exhibits the West-European Economy

and the Indian Economy in four periods of transformation, which, however, from the nature of the case cannot be synchronous or identical. In regard to West-European Economy the British-German equations are being shown for each of these periods. The French equations with Germany or with England are being given for the first two periods only. In regard to India it is the equations with Germany as a " relatively late " comer, and with England as the pioneer in the domain of technocracy and industrial revolution, that are chiefly pointed out, while the relations with France are indicated only incidentally.

It is to be observed that the categories, " industrialization," " first industrial revolution " and " second industrial revolution " have reference to the different degrees in the intensity and extensity of the socio-economic transformation as measured by *per capita* or per sq. mile values. In any case they are vague and sociologically anything but definite. International statistics, besides, are very incomplete and very uncomparable, and therefore must not be made too much of. And yet some amount of precision for general purposes can be obtained—provided we take care to guard ourselves against the monistic economic determinism of Karl Marx—from an examination of the equations of comparative industrialism as tabled below[1]:

West-European Economy	*Indian Economy*
I	I
1785-1830	1793-1853
" Industrial Revolution " is consummated in England. The age of technocracy commences its career. But France and Germany (1830) = England (1800).	From the Permanent Settlement in Bengal to the first cotton mill in Bombay. " Commercial revolution " in India on account of contacts with Europe through England. No new " Industries." India ... ... (1853) =England ... ... (1785) =almost France ... (1830) =almost Germany ... (1830)

[1] In no instance should the equation be treated as possessing more than the value of " nearest approaches " or " approximate similarities "; cf. H. Hauser: *Les Débuts du Capitalisme* (Paris, 1931), pp. 42-44, 309-323, where the terms " industry," " industrial revolution," " capitalism," etc., have been subjected to careful sociological criticism. The strength and weakness of the economic interpretation of history have been examined at length in R. Michels: *Corso di Sociologia Politica* (Milan, 1927), pp. 15-17, 47-52, 81-85.

West-European Economy

II

1830-70

Industrial Revolution progresses in France and somewhat later in Germany. But Germany (1870) = England (1830-48). Rising birth-rate in the West-European economy (1841-80).

III

1870-1905

In technocracy Germany catches up to England.

Germany (1905) = England (1905).

The epoch of " world-economy " in its most pronounced phases commences with the opening of the Suez Canal (1869).

The decline commences in the birth-rate (1881-90).

IV

1905-35

The " second " Industrial Revolution progresses in Germany, England, (the U.S.A. and some other countries). "Rationalization" and Technocracy paramount.

The epoch of world-economy is intensified, among other factors, by the opening of the Panama Canal (1915).

The decline in the birth-rate continues.

Indian Economy

II

1854-85

" Industrialization " (but not industrial revolution) commences slowly and in a weak manner.

India ... ... (1885)
= France ... ... (1848)
= Germany ... ... (1848)
= England ... ... (1815)

III

1886-1905

Industrialization continues at a slow rate. The Indian *intelligentsia* is growing self-conscious and seeks to achieve a veritable industrial " revolution." The economic sentiments of the Indian National Congress (1886) lead up to the Swaraj-Boycott-Swadeshi complex (1905).

India (1905) = Germany (1850-60)
= England (1830).

Rising birth-rate in India (1881-1910).

IV

1905-35

Industrialization is somewhat accentuated on account of the Swadeshi-Movement and the Great War (1914-18) and yet hardly constitutes an industrial " revolution " in terms of *per capita* or per sq. mile values.

In technocracy India (1935)
= Germany (1865-75)
= England (1848).

The decline in the birth-rate commences (1910-20).

In the above *tableau économique* the processes of transformation are identical on both sides, the West-European and the Indian. The chronological backwardness of certain regions in the West-European economy in relation to England the pioneer is quite clear. Equally clear also is the chronological backwardness of economic India in relation not only to England, but to the West-European economy as a whole. In technocracy India at 1905, *i.e.* when the *Swadeshi* Movement commences, is about 45-55 years behind Germany and about 75 years behind England. The general economic and social conditions of the Indian people as well as their material standard of life and efficiency are at this time on more or less the same level—allowing for the differences in climate and manners—as in these West-European countries between 1830 and 1860. There is nothing extraordinary, therefore, that the birth-rate tendencies, namely, in the direction of ascent, which prevailed in these regions in those earlier years should manifest themselves along general lines in the Indian economy during this later period (1886-1910). It is under the more or less identical conditions of "temperature and pressure," to use a phrase from physics, that the more or less identical birth-phenomena, namely, the rising birth-rates have taken place. Only the periods of time during which the conditions have developed are some three decades apart from each other, the third period of the Indian Economy corresponding with the second period of the West-European.

The next phase in both these economies is a declining birth-rate. The decline commences in the West-European in the third period, but in the Indian in the fourth period. This decline, is, however, quite a curious phenomenon.

The third and fourth periods of the West-European Economy are, if anything, but continuations of the previous two periods in technocracy, industrial revolution, etc. We have here indeed the beginning of real "world-economy" and what may be called the "second" industrial revolution, altogether an expansion and intensification of the economic prosperity which commenced about 1760-1830. And so far as the Indian Economy is concerned, the fourth period has likewise witnessed nothing but the accentuation of all the technical and financial forces which operated in the third. The progress of industrialization in India has certainly embodied itself during this period in such productive enterprises and items of consumption as sharply distinguished it from the third as moving on a higher plane. Material prosperity has grown in

India as in Western Europe, although undoubtedly at different rates in recent years.

Should the growing economic prosperity be a concomitant factor with the rising birth-rate in certain periods of West-European and Indian life-history, the birth-rate ought to continue to rise during succeeding periods which witness the continuity, nay, expansion of the economic prosperity. But the actual facts of international vital statistics happen to be the exact opposite of what is logically expected. Instead of the birth-rate rising higher or at any rate maintaining a high level with higher doses of industrialization, technocracy, world-economy and material prosperity, it has actually fallen and has been going down lower and lower. And the decline is patent as much in the West-European Economy as in the Indian.[1]

INDIA'S PROBLEMS IN ECONOMIC STATESMANSHIP

Within the limitations to which all sociological equations as attempts at measuring magnitudes bearing on "un-exact" sciences are bound to be subject, it should be equally possibie to indicate, for the purposes of comparative social statistics, the rates of growth in the line of modernization for different regions of Eur-America as well. The entire West is not one in industrialism, democracy or the corresponding philosophies. To take one instance, that of Germany, we should find the following equations:

(1) Germany (*c.* 1875)=Great Britain (*c.* 1830-48).

But (2) Germany (*c.* 1905)=Great Britain (*c.* 1905).

The first equation says that about 1875 Germany was tremendously behind Great Britain, say, by a whole generation. But by 1905, *i.e.* in 30 years she, first, made up the distance and, secondly, caught up to the latter. She was indeed on the point of crossing the equation-limit. The war of 1914-18 should appear socio-philosophically to be nothing more than the dramatic demonstration of this disturbance of the economico-technocratic equation or societal equilibrium in the international field.

[1] The present author's: "Quozienti di Natalità, di Mortalità e di Aumento Naturale nell India Attuale nel Quadro della Demografia Comparata" in the *Proceedings of the International Congress for the Study of Population* (Rome, 1931); "The Trend of Indian Birth Rates" (in the *Indian Journal of Economics*, Allahabad, April and July, 1934); *Neue Orientierungen in Optimum und wirtschaftliche Leistungsfaehigkeit mit Beruecksichtigung auf die indische Bevoelkerungs und Gesundheitsstatistik* (International Congress for the Study of Population Problems, Berlin, 1935); and *The Sociology of Population* (Calcutta, 1936).

The societal equations discussed here involve two fundamental considerations in the problem of human progress. The first has reference to the fact that during historic periods the evolution of mankind has been continuous, although not without ups and downs, cuts and breaks. And the second invites us to note that the societal development has been in the main along uniform lines, although not without diversities in regional and racial contexts.

For earlier periods the more or less approximate socio-philosophical identities or similarities may be roughly indicated as follows:

(1) East (down to *c.* 1300) = West (down to *c.* 1300) institutionally as well as ideologically.

(2) Renaissance in the East (*c.* 1400-1600) = Renaissance in the West (*c.* 1400-1600).

(3) *c.* 1600-1750. The new physical or positive sciences in the West constitute a special feature of the European Renaissance. The Asian Renaissance produces fine arts, but no new positive science worth mentioning. All the same, no genuine societal differentiations between the East and the West are perceptible as yet. We may then institute the following two equations:

(a) Asia in positive science (*c.* 1600-1750) = Europe in positive science (*c.* 1400-1600).

(b) Asia in socio-economic life (*c.* 1600-1750) = Europe in socio-economic life (*c.* 1600-1750).

(4) *c.* 1750-1850. Industrial Revolution in the West creates a new civilization, the "modern world." East and West differ substantially for the first time. Thus Asia (*c.* 1850) = Europe (*c.* 1750).

About 1850 the "East" is behind the "West" by nearly a century, in technocracy, economic institutions and general culture (see Table I above).

The previous stages of evolution may be left alone for the present. An analysis of economic life in the contemporary Balkans would lead to the result that Jugoslavia, Rumania, Bulgaria, Greece, Turkey, etc., represent almost the same stages in technocratic evolution in which India finds herself at the present day. Almost each one of the new states that lie between the German and Russian spheres and between the Baltic Sea and the Eastern Mediterranean, with the exception perhaps of Czechoslovakia, is an India in miniature. Economically speaking, each of these states embodies the efforts of semi-developed and more or less chiefly agricultural peoples at imbibing the culture of the more advanced

Western Europe and America. They represent the process by which Eastern Europe is tending to bid adieu finally to the lingering vestiges of the feudal-agrarian system, the medieval economic organization and technique, which disappeared in England, the U.S.A., France and Germany between 1750 and 1850.

In point of industrialization, technocracy and capitalism the British, German and American standard is the highest in the world. Nearly two-thirds of the European continent are in the more or less undeveloped and medieval conditions of Spain.[1] That is why the people of India should make it a point to study the methods and achievements of Spain and other second-rate and third-rate countries of Eur-America. It would be a wrong policy for Young India always to talk of England, Germany and America while organizing industrial, literary, educational and library movements.

Modern civilization has been advancing from the West to the East. There is no region to-day more significant for the development of India than the Balkans, Central-Eastern Europe, the Baltic States and Russia. The problems that are being fought over and settled in these territories—generally described as the " Balkan complex " by the present author—are identical in many ways with the problems that await solution and are challenging the patriots, industrial experts and social workers of India.

The conclusion from an examination of the earlier stages of "modern " banking in France and Germany from the standpoint of comparative bank-statistics is equally significant with reference to the equations that are being discussed here. When one studies the European figures with special reference to Indian conditions, one should suspect that in banking, as in other aspects of economic and social (perhaps also cultural) development, India has yet to commence mastering the ideas of 1870 or thereabouts and traverse the ground covered by the moderns since then.

The cumulative effect of all these investigations may be embodied in the following futuristic equation: " Whatever has happened in the economic sphere in Eur-America during the past half-century is bound

[1] H. S. Suhrawardy: "Diversities of Spain," lecture at the "Antarjātik Banga" Parishat (" International Bengal " Institute), Calcutta, 27th April, 1932; M. Deb-Ray: " Spain To-day," lecture at the " Malda in Calcutta " Society, 5th July, 1935, reported in the *Amrita Bazar Patrika*, Calcutta, for 12th July, 1935. See also the present author's *The Politics of Boundaries* (Calcutta, 1926), *Greetings to Young India* (Calcutta, 1927), and *The Political Philosophies Since 1905* (Madras, 1928).

also to happen more or less on similar and even identical lines in Asia, and of course in India during the next two generations or so. The problem before applied sociology and economic statesmanship, so far as India is concerned, consists in envisaging and hastening the working out of the "next stages" in technical progress as well as socio-economic and socio-political life.

The practical significance of the equations of applied economics as indicated here is not to be overlooked. Comparative industrialism discovers that in orientations to the "world-economy" economic India exhibits the features of an economically young, undeveloped or semi-developed people *vis-à-vis* the industrial "adults" of the day. In the interest of economic legislation and other aids to economic development, it may perhaps be quite one's worth while in India to try to cultivate up-to-dateness in the world-statistics, world-techniques and the world-ideals of economics. But for the more "practical" considerations of "realizable" ideals and methods of economic statesmanship, India will have to devote special attention to assimilating intensively the achievements in theory and practice such as the economic adults were contributing to the world, say, a generation or two ago. It is easier for a certain number or rather a handful of intellectuals, considered as individuals, to advance "ideologically," than for an entire race or some substantially large sections of the population to grow in terms of institutions and get used to new techniques, habits and usages.

The banking situation in India to-day, to take an instance of current interest, can be aptly described in the words of the National Monetary Commission (1908), which sat to examine and report on the defects in the financial organization of the U.S.A. In 1911, we are told, the Americans exported about $650,000,000 in value of cotton. It was largely financed by 60 or 90 day bills drawn on Liverpool, London, Paris or Berlin. And this business was "practically all done by foreign banks or bankers." In regard to domestic trade also the American methods were "crude, expensive and unworthy of an intelligent people." The Commission observed as follows: "The man who raises cotton in Mississippi or cattle in Texas, or the farmer who raises wheat in the North-west cannot readily find a market in Chicago, New York or London for the obligations arising out of the transactions connected with the growth and movement of his products, because the bankers of these cities have no knowledge of his character and responsibility."[1]

[1] *Report of the National Monetary Commission* (Washington D.C., 1912), pp. 29-39.

Factually, perhaps, from the standpoint of comparative development, in spite of the modest language of the Commission the American conditions of two decades and a half ago were not literally as "crude" and "disgraceful" or "young" as the Indian conditions to-day. But "generically" speaking, the two conditions are similar, if not identical. And Indian bank-reformers have, therefore, more to learn of pre-war than of post-war America or the Rooseveltian "New Deal" of to-day. We should have to begin at, say, the American stage of 1908. It is to be observed, however, in the interest of precision that the American economic curve of 1908 or thereabouts was already much too high, as representing quite an "adult" phenomenon, for the Indian curve of 1930-35. Statistically, there are indeed reasons to believe that for all practical purposes, the present Indian conditions hardly register anything beyond the Western-European or American growth of the seventies of the last century. Altogether, when we in India speak of pre-war Eur-America as a general guide for our present purposes, we should really have in our mind the second half or rather the third quarter of the nineteenth century.

That is why, with a view to the pressing requirements of Indian commerce, manufacture, agriculture, labour, and economic legislation bearing on these practical aspects of life, we should often be at liberty to overlook or ignore the latest developments in the Western world. Indian studies in the twentieth century and especially the post-war phases of Eur-American experience—rationalization, trustification, "economic planning," etc.—are mainly to be evaluated as academic investigations into the possibilities of mankind's economic evolution and as scientific researches in the "next stages" of the world's developments in technical and national lines. To that extent such investigations would possess indeed a dynamic value of no mean order, fraught as they are likely to be with suggestions of a practical character.

On the other hand, the methods and policies of economic India to-day should appear to be almost akin to, nay, identical with those of the other economic youngsters of the world—in Southern or Eastern Europe, South America, Asia and Africa. The industrialization of India and other young regions can be appreciated at its proper worth—technocratic, commercial, social and political—only by those who are prepared not to overlook or minimize the importance of the "new industrial and commercial revolution" through which the adults have been passing for the last three decades, especially during and since the Great War. Once

these perspectives of international economic life and the new world-order were grasped in their due proportions, it might perhaps be possible to discover the proper scientific approaches to the regulation of the economic and other conflicts between the " young ambitions " and the " vested interests."

The world-economy as patent to-day is the system of economic institutions and ideologies prominent since, say, 1918-20. In a concrete manner they may be said to be embodied in organizations like the League of Nations, the International Bureau of Labour, the International Chamber of Commerce, International Cartels, " planned economy," etc. It is clear that India is already a part of this complex, and willynilly has been trying to rise up to the methodology and technique of the new world-order. But the discrepancies lie no less on the surface. These consist in the attempts of a junior that is furnished, as it evolutionally is, with somewhat semi-medieval paraphernalia, but is compelled none the less to observe and follow the up-to-date standard of the comparatively advanced members in the society of nations. This compulsion perpetually to aim at the highest and attitudinize oneself to the *mores* and code of the seniors may to a certain extent undoubtedly hasten the developmental processes in the junior. But the frictions due to actual maladjustment and absence of natural harmony in the economic *Realpolitik* cannot fail to be the source of internationally tragic situations. The lack of adaptation between the economics of youngsters and those of the adults constitutes the greatest stumbling-block, technically considered, to international concord in the epoch of world-economy.[1]

THE STRUGGLE FOR EQUALITY BETWEEN THE EAST AND THE WEST

In connection with the creation of values by modern India it were well to observe always that Asia has never been reconciled to the cultural and other backwardness in which she finds herself *vis-à-vis* Eur-America in recent generations.

The events in India, China and Persia have only served to convince leading Asians of the need for a more thorough preparedness in order to consummate the great achievement, namely, the realization under present-day conditions of the traditional equality between the East and the West. It is, therefore, as a period of long-drawn-out " mewing

[1] See the discussion on the relations between the " second " and the " first " industrial revolutions—the " adults " and the " youngsters "—in connection with the analysis of the world-economic depression in *Applied Economics* (Calcutta), Vol. I. (1932).

of might " that Asia has regarded the last few generations of her inferiority in diverse fields. Saiyad Jamaluddin of Persia, the organizer of Pan-Islam, and Kang Yu-wei, the John the Baptist of China's modernization, are no less or more embodiments of creative reaction to Eur-American hegemony, than are one and all of India's great men who have furnished for a whole century the intellectual and moral backbone of the movement which subsequently culminated in the " ideas of 1905 " as well as in the industrial, scientific, literary, artistic, social and other developments since then.

The spirit of modern India is the spirit of constructive protest and assimilative challenge.[1] We may tell the story of Rammohun Roy (1772-1833) of Bengal, the first Prince Ito of New Asia, of Jamshedji Tata (1839-1903), the Parsi, whose creative adventures in cotton mills, steel, hydro-electricity and industrial research have demonstrated to the world that the East is not different from the West even in modern spirit, or of Aurobindo Ghosh whose cult of service to India inspires people to " work that she may prosper and suffer that she may rejoice " (1907), and Mohandas Karamchand Gandhi of Gujarat, in whose practice of

[1] Consult *Indian Nation-Builders Series* (Madras); A. C. Mazumdar: *Indian National Evolution* (Madras, 1916); Lajpat Rai: *Young India* (New York, 1918); S. N. Banerjee: *A Nation in Making* (London, 1926); B. C. Pal: *Madras Speeches*, 1907 (Ganesan, Madras), and *Memories of My Life and Times* (Calcutta, 1932); the present author's *Greetings to Young India* (Calcutta, 1927) and " Chittaranjan Das and Young Asia " in *The Political Philosophies Since 1905* (Madras, 1928).

For political topics, not discussed in the present paper, see B. G. Sapre: *The Growth of Indian Constitution and Administration* (Sangli, 1924) and G. N. Singh: *Landmarks in Indian Constitutional and National Development* (1600-1919), Benares, 1933.

See also *Congress Presidential Addresses*:

Vol. I. (1885 to 1910)

From the Foundation to the Silver Jubilee:

W. C. Bonnerji, Dadabhai Naoroji, Budruddin Tyabji, George Yale, William Wedderburn, Pherozeshah Mehta, P. Ananda Charlu, W. C. Bonnerji, Dadabhai Naoroji, Alfred Webb, Surendranath Banerjee, R. M. Sayani, C. Sankaran Nair, A. M. Bose, R. C. Dutt, N. G. Chandavarkar, D. E. Wacha, Surendranath Banerjee, Lal Mohan Ghose, Henry Cotton, G. K. Gokhale (1905), Dadabhai Naoroji (1906), Rash Behari Ghose (Surat), Rash Behari Ghose (Madras), Pandit Madan Mohan Malaviya, William Wedderburn.

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From the Silver to the Golden Jubilee:

Bishan Narayan Dhar, R. N. Mudholkar, Syed Mohammed, Bhupendranath Basu, Satyendra Prasanna Sinha, Ambica Charan Mazumdar, Annie Besant, Madan Mohon Malaviya, Motilal Nehru, C. Vijayaraghavachariar, Ajmal Khan, Chittaranjan Das, Mohamed Ali, Gandhi, Sarojini Naidu, Srinivasa Iyengar, M. A. Ansari, Motilal Nehru, Jawaharlal Nehru, Vallabhbhai Patel, Rajendra Prasad.

(Madras, 1935).

Satyāgraha (devotion to truth) or passive resistance the leaders of the world are discovering the pragmatic methodology of all weaker races and classes.

The topic may be the biography of Syed Ahmed Khan (1817-1893) of the United Provinces, the energizer of Indian Islam, of Dadabhai Naoroji (1821-1917), the Parsi, who rediscovered *Svarāj* (self-determination) from ancient and medieval (e.g. Maratha) polity as the inspiring goal of modern India, of Bal Gangadhar Tilak (1856-1920) of the Deccan, who furnished Indian patriots with their moral philosophy by championing the "categorical imperative" of the *Gītā* (the Bible of mystical energism) for all and sundry, or of Lajpat Rai of the Punjab, who has sought in Urdu to assimilate for his countrymen all the progressive elements in modern thought. Or, again, the story may have to do with Surendra Nath Banerjee (1848-1924), the indefatigable agitator in the interest of the people's constitutional and civic advance, Bipin Chandra Pal (1857-1931), the philosophical organizer of the "ideas of 1905," Chitta Ranjan Das (1870-1925), the stern realist who in order to promote the service of political ideals manufactured a party, or Asutosh Mookerjee (1864-1924), whose educational endeavours were impregnated with the ambition of establishing India's equality with the creators of modern civilization.

In every instance—Bengali, Punjabi, Maratha, Gujarati, Hindu or Moslem—it is the story of invincible will, of self-assertion and pride, and of competitive intelligence. And these features are but naturally to be expected of persons nurtured in the traditions of Tipu Sultan (*c.* 1795), the Moslem monarch of Mysore, and Shivaji the Great (*c.* 1674), the Frederick the Great of the Hindus, to mention two of the most patriotic personalities of creative India in somewhat recent times.

If some of modern India's great men have claims to be remembered more in the social, religious and literary fields than in the political, the spirit of self-conscious challenge and co-operative competition is none the less characteristic of their message and life-work. Consider, for example, Dayananda (1824-1893) with his militant call to Vedic spirituality and morals as well as declaration of war against the imperialistic and chauvinistic missionaries from Eur-America, and Vivekananda (1863-1902) with his gospel of Upanishadic manhood and world-conquest in triumphant defiance of the dehumanizing conditions of life. Consider, too, Kali Charan Banerji (1847-1902), the seer of an "Indian Christianity" emancipated from foreign ecclesiastical control. And Rabindranath

Tagore, also, notwithstanding his occasional neo-Platonic public utterances, is in the deeper estimation of his countrymen but the singer of songs and writer of essays which are filled, like those of Whitman and Shelley, with the spirit of resistance against the tyranny of " defeatism " and " inferiority-complex " on the one hand and of colonialism and the " white man's burthen " on the other.

In every phase of life in India to-day—political or cultural, economic or artistic—everybody who is anybody is a fighter, a fighter against some social obscurantism, whether Hindu or Moslem, some alien chauvinism, some vassalage in art, some industrial thraldom, or some subjection in scientific, sociological, economic or philosophical theory. It is in such fights that the emancipation of his soul lies. Verily, to-day as ever in the past *śakti*, energy or force, is the very deity of Creative India's men and women. And this energism (*śakti-yoga*) is but normal with the genius of the people. For, what else is Indian culture but the successful consummation of the Promethean strife from epoch to epoch? And of this, as the folk-mind learns it from Bhartṛihari's (*c.* 800) *Nītiśataka* (Century of Verses on Morals, stanza 80), the most typical landmark is bodied forth in the cosmic struggle of the gods for the acquisition of nectar, *amṛita* (immortality or deathlessness).

III

THE PURSUIT OF SCIENCE

SCIENCE AND RELIGION

The belief in a continuously progressing world, occasionally disturbed by cataclysmic events like large-scale wars, epidemics, and famines, is the fountain-head of the astounding activity of the Western nations in the field of action and thought. The Eastern nations, with the remembrance of the chequered histories of thousands of years of civilized life behind them, are more cautious. They conceive of civilizations in terms of periods, *i.e.* each period consisting of a time of growth followed by epochs of consolidation, development, decline and decay, to be again followed by other similar periods. But there are indications that even Western scholars, with the exception of the Americans who have developed the psychology of " nuovo riche," and cannot think of a future epoch of decline, are coming to an appreciation of the Eastern viewpoint. Otto Spengler, in his monumental survey of the past and present civilizations, has tried to establish that all civilizations run through a cycle. There is a springtime when a certain type of culture just germinates, followed by a summer when it is consolidated and fully developed; this is again followed by an autumn, a period of apparent grandeur, but actually one of sterility and ending in a winter which is a period of decline and decay. He has illustrated his viewpoint with consummate skill by an analysis of the periods of Egyptian, Semitic, Chinese, Indian, and north Mediterranean civilizations. He says that the seeds of the Greco-Roman or north Mediterranean civilization can be traced from the time of the barbarian Doric invasions which overwhelmed ancient Greece of Cretan and Mycenean civilizations. This period of Homeric poems, of epic fights, and of gradual emergence of the Hellenic religion of anthropomorphic gods and goddesses was again followed by a summer when the Greek city-states flourished, town-life, literature and art were developed, and the Greeks maintained their own against the aggressive imperialism of the Persians. The autumn, a period of imposing external appearance, but actually having no element of progress, started with the development of reason and scientific enquiry and with the growth of Macedonian and Roman imperialism. With the barbarian invasions came the long winter—the collapse of the empire, and the darkness of the medieval ages. The veil is lifted only when the barbarians, under the zeal of religious fervour (the crusade) came into contact with the

Eastern world of culture, and imbibed the essential elements for the foundation of the civilization. But its springtime which began with the crusade and the penetration of Europe into all parts of the world came to an end in about 1650. The summer which is a period of intense activity, consolidation and expansion may be said to have ended with 1900, when European nations had, under their feet, practically the whole habitable and inhabitable world. Spengler believes that the autumn has already set in. He finds the symptoms in the decline of religion, development of an extreme form of rationalism, and inability of the social system to adapt itself to the new formative forces. He views the future with despondency.

This last theme is, however, hotly contested. The critics point to the enormous and unprecedented achievements of science which are revolutionizing human action and thought, and bringing the nationalities together—a factor which they claim was absent in the old cultures. They argue that, in former times, the older civilizations had no idea that the earth could be exploited to such an extent as to enable humanity to tide over all the economic distresses which are the causes of strife and decline. They also point confidently to the time when, with the aid of forthcoming biological discoveries, birth and quality of the offspring can be controlled so that a newer race would come to people the earth, imbued with much finer ideals.

But the course of events during the last fifteen years after the War has probably more than justified Spengler's pessimism. All the claims made on behalf of science are admitted, but a great votary of science reminds us with serious emphasis that the command of Nature has been put into man's hand before he has learnt how to govern himself. At the present time such spirits of selfish and dangerous nationalism are being shown by some powerful nations of the West that probably before biology can present us with discoveries which will make religion a superfluity, the Western world along with many of its fine achievements in the domains of human culture may be consumed in a holocaust of strife and destruction. It is fairly certain that man cannot control destiny, whatever it may turn out to be. We can only wait, and watch the inevitable march of events.

It is clear that a solution of these problems cannot be achieved by politicians, for they represent the egoism of nations or groups, and people saturated with egoistic ideals cannot look upon a problem from a higher viewpoint. Neither can such problems be handled by the scientists

who are usually immersed in problems of their own far removed from life. The prospect that the revival of religious spirit may lead to a solution is also equally illusory. It is true that during the past epochs of human history great spirits have occasionally come forth with new ideals of life and co-operation to fulfil the needs of the different ages. These founders of religion or of orders have profoundly modified the course of human history, and we can realize the far-reaching influence of such religions, if we witness the events following the birth of Zoroastrianism, Buddhism, Christianity and Islam. Is there any possibility that a religious movement on a large scale may again spring up, and solve the pressing problem of the modern world?

A large-scale movement on religious lines may occur in some particular parts of the world, but it is clear that such an event will not lead to better days. Let us see what are the origins of religion: Life is dear to us all, and we cannot but be interested in its problems; but being for long unable to make any headway from the scientific side, we have been tempted to seek a means of escape from the blind forces of Nature to the friendly care of a hypothetical Providence. The idea of helplessness was more keenly felt by men before the era of science, and is probably the origin of religion, but the older religions are based upon an insufficient knowledge of the universe, of Nature, as well as of organic life, and are largely subjective in origin. They cannot, therefore, satisfy the modern demands.

In order that religion may again be a living force, it is necessary that the existing religious knowledge should be studied as a science, and such studies should be supplemented by a scientific study of the problems of human life, a careful analysis of the human mind, in fact as Spinoza put it three centuries ago:

"Not to laugh or weep over the actions of men but simply to understand them, and to contemplate their affections and passions, such as love, hate, anger, arrogance, pity, and all other disturbances of the soul, not as vices of human nature, but as properties belonging to it in the same way as heat, cold, storm, and thunder belonging to the atmosphere. For these, though troublesome, are yet necessary, and have certain causes through which we may come to understand them, and thus by contemplating them in their truth, gain for our minds as much pleasure as by knowledge of things that are pleasing to the sense."

We contemplate, by these methods, the emergence of an 'Evolutionary Religious System,' knowledge and practice of which can be

transmitted to man just like scientific or professional knowledge for the guidance of human conduct. At the present time, the very fact that all religious systems are codified under the shelter of divine origin prevents their knowledge being tested at its proper ethical value. Three centuries ago, the knowledge of human body and of diseases and drugs was slight. Mortality and suffering due to diseases were extremely high. But owing to the progress of science and co-operative study knowledge has so far advanced that mankind is better able to take care of its body and an ordinary medical man can better cope with diseases than Hippocrates or Galen. But the same cannot be said of religious discipline or experience which still remains an individualistic effort. The experience of one teacher grows and dies with him, and very little of it is faithfully transmitted. Very often, in the hands of the followers, it degenerates into instruments of private gain. But if the study and discipline of religion be carried on in a scientific spirit, probably we may arrive at a system of knowledge which will discharge a much greater function than medical knowledge, viz. a harmonious response of the individual human mind to the large-scale phenomena of human society, and of Nature.

HINDU ASTRONOMY

The subject of this paper naturally divides itself into three parts: Vedic astronomy, post-Vedic and pre-scientific Hindu astronomy, and scientific Hindu astronomy.

I. Vedic Astronomy

The Vedic religion required the performance of various sacrifices in different seasons of the year[1] and Vedic astronomy taught when to begin the sacrifice and when to end it. Sometimes the *yajñas* or Vedic sacrifices were begun with the sun reaching the winter solstice and continued till his return to the same position. These were called *sāmvatsara* or yearly sacrifices. Now the seasons begin and end with the position of the solstices and equinoxes. It was therefore necessary to determine when the sun reached the solstices and the equinoxes. This was done periodically at an interval of 600 to 300 years. The Vedic calendar was luni-solar in character. The year was intended to be tropical and the months were synodic, sometimes begining from the light half and sometimes from the dark half. The Vedic Aryans depended more upon the observed positions of the sun and the moon and calculation was often discredited.[2] For example, we take the meaning of the term *amāvāsyā*. The *Śatapatha Brāhmaṇa* (I. 6. 4. 5) thus defines it: "This is the king Soma; what is the food of the gods is the moon, who, when he is not seen this night either in the east or in the west, enters water and the food-giving plants on this earth. He is the wealth of the gods, viz. food. As he comes over to the earth this night, it is named *āmāvāsya*."

Thus the term meant the period of the moon's invisibility; it might be for one night or for two consecutive nights. Another name for it was *darśa* or period of invisibility. It is perhaps needless to state that astronomy had not sufficiently developed to enable the sages to calculate this period of invisibility. Then again, the full-moon day could not be easily known. By observation with the naked eye they called the first night of the moon's apparent fullness *anumati* and the second or the next night of the moon's apparent fullness, *rākā*. The first night in which

[1] "One should perform the *Jyotishṭoma* sacrifice in the spring and the *Vājapeya* in the summer"—quoted by Somakāra in his commentary on *Yājusha Jyotisha*, 3.

[2] Cf. *Mahābhārata*, XIII. 104. 38.

the moon could not be seen either in the east or in the west, was called by them *sinīvālī*, and the next night by the name *kuhū*.[1] The *nakshatras* or the ecliptic stars were known to them. They counted them from the Kṛittikā.[2] The months were lunar as well as solar. They were enumerated as follows:

The solar months were named and counted from Tapas, Tapasya, Madhu, Mādhava, Śukra, Śuchi, Nabhas, Nabhasya, Isha, Urja, Sahas and Sahasya.[3] The months Tapas and Tapasya formed the winter; Madhu and Mādhava, the spring; Śukra and Śuchi, the summer; Nabhas and Nabhasya, the rains; Isha and Urja, the autumn; and Sahas and Sahasya, the *hemanta* or dewy season.[4] Seasons were sometimes reckoned as five in all, by taking the *hemanta* and winter seasons as one season.[5] The lunar months were Phālguna, Chaitra, Vaiśākha, Jyaishṭha, Āshāḍha, Śrāvaṇa, Bhādrapada or Praushṭhapada, Āśvina, Kārttika, Agrahāyaṇa or Mārgaśirsha, Pausha and Māgha. In the earliest Brāhmaṇa period the correspondence of the solar and lunar months and the seasons was as follows:

Lunar months		Solar months		Seasons
Phālguna	...	Tapas	...	Winter
Chaitra	...	Tapasya	...	
Vaiśākha	...	Madhu	...	Spring
Jyaishṭha	...	Mādhava	...	
Āshāḍha	...	Śukra	...	Summer
Śrāvaṇa	...	Śuchi	...	
Bhādra	...	Nabhas	...	Rains
Āśvina	...	Nabhasya	...	
Kārttika	...	Isha	...	Autumn
Agrahāyaṇa	...	Urja	...	
Pausha	...	Sahas	...	*Hemanta* or Dewy season
Māgha	...	Sahasya	...	

[1] *Aitareya Brāhmaṇa* xxxii. 10; also *Gopatha Brāhmaṇa* vi. 10, quoted by S. B. Dikshita, in his *Bhāratīya Jyotiḥśāstra*, p. 46 (2nd ed.).

[2] *Taittirīya Br.* I. 5. 1; also *Taittirīya Saṁ.* IV. 4. 10, quoted in Dikshita's work, p. 53 (2nd ed.).

[3] *Taittirīya Saṁ.* I. 4. 14.

[4] *Ibid.* IV. 4. 11.

[5] *Aitareya Br.* I. 1.

The months reckoned were generally lunar. In the year, the Vedic *ṛishis* (sages) counted twelve or thirteen months.[1] In adjusting the lunar calendar to the solar they followed the five-yearly luni-solar cycle and the years were named Saṁvatsara, Parivatsara, Idāvatsara, Udvatsara and Idvatsara.[2] At the end of each cycle of five years the conjunction of the moon with the sun and the fixed stars was taken to repeat in the same order. The months were begun either from a full moon or a new moon. If they could observe that a full moon happened exactly at the star Pūrva Phalgunī, that night was reckoned as the last night of the year. From the next day they began their month of Phālguna; then came Chaitra and other months. In some years they reckoned thirteen months till they arrived at the same full moon at the Pūrva Phalgunī. They also counted the months from a new moon to the next new moon. They began their cycle of five years from the new moon of Māgha, *i.e.* the new moon which happened a half month after the full moon at Maghā or Regulus. The difference in the two systems was a year and a few days. For example, in the year 1935 A.D. the true new moon of Māgha happened on the 5th March and in 1936 A.D. one true full moon at the Pūrva Phalgunī fell on the 8th March. There was perhaps a small difference of about three days in a cycle of five years. The *amānta* (ending in a new moon) cycle would thus begin first and one year before the *pūrṇimānta* (ending in a full moon) cycle. The year was intended to be tropical in nature and began with the month of Phālguna in both the systems of month reckoning. The beginning was often made from the winter solstice.

The Vedic *ṛishis* were periodical observers of the equinoxes and solstices. They knew how to determine the four cardinal directions by means of the gnomon.[3] They took that day to be the equinoctial day on which the sun rose or set exactly at the east or west point. As to their method of finding the day of winter solstice, they most probably followed this plan: At the solstice the sun appears to remain stationary for a number of days at the rising point on the horizon at the extreme north or south point. Supposing that the sun appeared to remain stationary for twenty-one days at the extreme south rising point, the Vedic *ṛishis* would take the eleventh day as the day of the winter solstice. This is seen from the way in which the *vishuvan* or the middle day of

[1] *Śatapatha Br.* II. 2. 1. 27.
[2] *Taittirīya Br.* III. 10. 4.
[3] *Kātyāyana Śulba Sūtra*, 2.

the year was determined by them.[1] The sacrifices of *Śunāśīrya* and *Chāturmāsya* were begun from the winter solstice and the Vedic *ṛishi* found the solution of his problem of determining the winter solstice by the method described above. The following determinations are recorded:

(*i*) In the *Kaushītaki Brāhmaṇa* (XIX. 3) it is stated that the sun turned north on the new-moon day of Māgha. In the same work (V. 1) it is again stated that the year ended with the full moon at the Pūrva Phalgunī. Again almost all the Brāhmaṇas say that the Kṛittikā or Pleiades never deviated from the east. It is also stated in the *Kaushītaki Brāhmaṇa* (XIX. 3) that the spring began one day after the new moon of Chaitra. From all these we gather that the summer solstitial colure passed very nearly through the star Delta Leonis. The approximate time for this determination was about 3100 B.C.[2] It will be noticed that the first two statements are respectively under the *amānta* and the *pūrṇimānta* system of lunar months.

(*ii*) Then again in the *Taittirīya Saṁhitā* (VII. 4. 8), it is stated that the winter solstice fell on the *ekāshṭakā* day or the eighth day of the dark half of the month of Māgha (*amānta*).[3] The *Tāṇḍya Brāhmaṇa* (V. 9) also makes the same statement. This *ekāshṭakā* is now known as the *śākāshṭakā* day. The oldest definition of this term is found in the *Āpastamba Gṛihya Sūtra* to be the eighth day following the full moon at Maghā or Regulus, on which the moon is nearer to the star Jyeshṭhā or Antares.[4] It says the sun reached the winter solstice when the moon in her last quarter was in conjunction with Jyeshṭhā or Antares. The time for this position of the winter solstice was about 2850 B.C.

(*iii*) The *Bhārata* hero Bhishma died on an ordinary *ekāshṭakā* day or an eighth day of the dark half of the month of Māgha. The *Mahābhārata* astronomical references at the time of the *Bhārata* battle indicate definitely that the time was 2449 B.C. The summer solstice of the time passed through a point, 1° 20′ ahead of Regulus or Maghā.

(*iv*) There is ample evidence available from the *Mahābhārata* and other statements in the Brāhmaṇas, that there was a time when the full moon at Maghā or Regulus indicated the winter solstice and the full moon at the Kṛittikā or Pleiades indicated the autumnal equinox.[5]

[1] *Aitareya Br.* XVIII. 18. Cf. Dikshita's work, p. 47 (2nd ed.).

[2] P. C. Sen Gupta: "The age of the Brāhmaṇas" in the *Indian Historical Quarterly*, Vol. X, No. 3 (1934).

[3] *Orion* by B. G. Tilak, pp. 44-45.

[4] *Ibid.*, p. 48, footnote.

[5] *M. Bh.* III. 82. 31-32, 36-37 and 84. 51-52; XIII. 25. 36-37, 46.

It has already been mentioned that the Kṛittikā was the first *nakshatra*, which had six stars.[1] The mean date for this astronomical event was 2350 B.C.

(*v*) In the *Baudhāyana Śrauta Sūtra* (16. 13) we have the statement that the *sāṁvatsara* or yearly sacrifices should be begun four days before the full moon at Maghā or Regulus. It is of course evident that such an event, viz. the full moon at Maghā, does not happen every year. The time for a position of the winter solstice happening four days before the full moon at Maghā was about 2050 B.C.

(*vi*) A *Bhāgavata* Upanishad, viz. the *Maitri*, quotes in chapter VI, possibly from an earlier work which has not yet been traced, that the sun turned south at the beginning of the *nakshatra* Maghā.[2] The oldest beginning of the Maghā is recorded in the *Pañchasiddhāntikā* at 6° behind the star Regulus. Hence the time of this position of the solstice was about 1900 B.C.

(*vii*) Lastly, the *Vedāṅgas* all state that the sun turned south at the middle of the *nakshatra* Āśleshā and turned north at the beginning of the *nakshatra* Dhanishṭhā or Śravishṭhā. From this statement of the position of the summer solstice and following the *Pañchasiddhāntikā*, we come to the conclusion that the time for this was about 1400 B.C.

So far as the Vedic literature is concerned, we do not get any indication of the position of the solstices of later times.

THE BEGINNING OF THE VEDIC YEAR

We have already said that the Vedic year began with the winter solstice, but there are many references to show that the spring was regarded as the first season.[3] The reason for this we find in the *Kaushitaki Brāhmaṇa* (XIX. 3), already referred to. After describing how to follow the sun in his northerly course with six-day periods of sacrifice till the middle of the year and then to continue the sacrifices for six months more till the sun's return to the winter solstice, the passage says: "They should not consecrate themselves at this time; the corn has not arrived, the days are short; shivering they come out of the final bath. Therefore they should consecrate themselves one day after the new moon

[1] *Śatapatha Br.* II. 1. 2. 2.

[2] The reference is probably to *Śatapatha Br.* II. 1. 2. 3, which says that the yearly sacrifice, the *Chāturmāsya*, according to some authorities, should now begin on the first visibility of the crescent before the full moon at the Pūrva Phalguni or Delta Leonis.

[3] *Taittirīya Br.* I. 1. 2. 6, 7 and III. 10. 4. 1. Cf. Dikshita's work, p. 53 (1931).

of Chaitra: the corn has come, the days are long, not shivering they come out of the final bath" (Keith).

There was thus a distinct rule to begin the yearly sacrifices from the beginning of spring to avoid the disadvantages of beginning with the winter solstice. In the later times of the *Taittirīya Saṁhitā*, the winter solstice fell on the *ekāshṭakā* day. The difficulty of beginning the yearly sacrifices was that "they went to the final bath not delighted with water." The new recommendation was to begin the sacrifices some time later.[1] It was thus that the spring came to be reckoned as the first season of the year in a new system of reckoning.

In reckoning time by five-yearly cycles they readily came to the conclusion that there were two intercalary months (synodic) in each cycle. In the *Mahābhārata* (IV. 51. 3-5) Bhīshma says that in every five years there are two intercalary months. But it is doubtful if the old Vedic *ṛishis* came also to the conclusion that there were thirty omitted lunar days in the same period. This was done in the *Jyotisha Vedāṅga*.

THE LATER VEDIC ASTRONOMY OF THE JYOTISHA VEDĀṄGAS

Of these *Jyotisha Vedāṅgas* two have been published by Mm. Sudhakara Dvivedi, viz. the *Yājusha Jyotisha* and *Ārcha Jyotisha*; both describe the same system of astronomy. In a five-yearly luni-solar cycle, these works recognized:

1830 Civil days.
1835 Sidereal days.
1800 Solar days.
62 Synodic months.
5 Sun's revolutions.
67 Moon's revolutions.[2]

Hence the year = 366 days, the Synodic month = $29\frac{16}{31}$ days.

In these works the twenty-seventh part of the ecliptic came to be accepted as one *nākshatra* space. The summer solstice was found to be at the middle of the *nakshatra* Aśleshā and the winter solstice at the first point of the *nakshatra* Dhanishṭhā.

The lunar months began and ended with the new moon. The relation between the solar and lunar months and the seasons was as follows:

[1] *Orion*, p. 44. etc.

[2] *Yājusha Jyotisha*, 28-29. Also cf. Sudhakara's exposition, p. 9 of his edition.

Lunar months		Solar months		Seasons
Māgha	...	Tapas	...	Winter
Phālguna	...	Tapasya	...	
Chaitra	...	Madhu	...	Spring
Vaiśākha	...	Mādhava	...	
Jyaishṭha	...	Śukra	...	Summer
Āshāḍha	...	Śuchi	...	
Śrāvaṇa	...	Nabhas	...	Rains
Bhādrapada	...	Nabhasya	...	
Āśvina	...	Isha	...	Autumn
Kārttika	...	Urja	...	
Agrahāyaṇa	...	Sahas	...	*Hemanta* or Dewy season
Pausha	...	Sahasya	...	

In these works also the seasons *hemanta* and winter were regarded as one season, so the year was thought to consist of five seasons. As shown before, in the early Vedic period the month of Tapas meant the lunar month Phālguna, but now and henceforth the solar month of Tapas came to be identified as the lunar month of Māgha.[1] This was due to the precession of the solstices in about 1700 years from 3100 to 1400 B.C. In these *Vedāṅga* tracts there is nowhere any mention of months ending with the full moon.

From the early Vedic times up to the time of compilation of the present *Mahābhārata* in the third or fourth century B.C. we do not find any mention of the signs of the zodiac, though 12 *rāśis* are recognized in the *Mahābhārata* and a *rāśi* is recognized as 2¼ *nakshatras*. It should also be recorded that in this period the planets Mercury, Venus, Mars, Jupiter and Saturn were discovered and known. Very probably some of the *grahachāras* or courses of planets giving the stages of direct and retrograde motions were determined, but the details are not found in the *Mahābhārata* or in the *Arthaśāstra* of Kauṭilya.

This system of luni-solar astronomy was continued in the old *Paitāmaha Siddhānta* as summarized in the *Pañchasiddhāntikā* of Varāhamihira (550 A.D.), of which the calculation starts from 2 A.D.

In this period from 1400 B.C. up to 2 A.D. we may notice two other works: the *Arthaśāstra* of Kauṭilya and the *Sūrya Pajñapti* representing the Jaina astronomy. These books show no further improvement

[1] *Yājusha Jyotisha*, 6.

in the astronomical constants of the *Jyotisha Vedāṅga*. In the latter work we find the theory of a flat earth, the sun, moon and stars moving in circles around the pole of the earth. Four mountain ranges were assumed as emanating from the pole and situated at right angles to each other, necessitating the hypothesis of two suns, two moons and two sets of stars. The Jaina astronomy was not concerned with new observations and contains mere speculations unconnected with observation. In this work it is mentioned that the sun turned south at the full moon near the star Abhijit or Vega, from which no date for the work can be determined. A curious feature of the astronomy of this period was that the moon was supposed to be at double the distance of the sun from the earth. This finishes our review of Hindu astronomy of the Vedic and post-Vedic times from 3100 B.C. to the first century A.D.

ASTRONOMERS OF THE VEDIC AND POST-VEDIC PERIOD

Before we pass on to the next period of the development of Hindu astronomy, it is necessary to say something of the astronomers of this period.

Vṛiddha Garga was the earliest of Hindu astronomers. His name is found in the *Mahābhārata* in two places.[1] He lived at a place on the river Sarasvatī, where he attained the knowledge of time and of the motion of the planets and stars and its variations, and *ṛishis* came from many places to attend upon him for learning his new science. In another place it is stated that he became the *sāmvatsara* or court-astronomer to Pṛithu, the son of Veṇa. It is quite possible that he lived at the time of the Pāṇḍavas (2449 B.C.). When the present *Mahābhārata* was compiled (400 A.D.), Vṛiddha Garga had already come to be regarded as the oldest Hindu astronomer, who had lived many centuries ago.

The next name is Lagdha, who was the author of *Yājusha Jyotisha*. It was he who found the summer solstice to pass through the middle of the *nakshatra* Aśleshā and the winter solstice through the first point of the *nakshatra* Dhanishṭhā. We have already summarized his astronomy.

Then come Garga and Parāśara. Both of them were inheritors and carriers of the tradition, viz. the position of the solstices as determined by Lagdha. As to Garga, we would refer the reader to the Commentary of Somākara on the *Yājusha Jyotisha*, (verse 10). As to Parāśara we learn from Bhaṭṭotpala's Commentary on the *Bṛihat Saṁhitā* (III. 4) that in Garga's time the sun turned north before reaching the *nakshatra*

[1] IX. 37. 14-17; XII. 59. 111.

Dhanishṭhā and in Parāśara's time before reaching Śravaṇā. It is thus clear that Garga lived after Lagdha, and Parāśara after Garga. Parāśara lived very probably in the second century A.D.

Names of other astronomers of less fame, found in Bhaṭṭotpala's Commentary, are Ṛishiputra, Kapilāchārya, Kaśyapa, Kāśyapa, Devala, etc., who were mere astrologers. We can get no idea as to the time when they lived and what they achieved in the field of Hindu astronomy.

II. Post-Vedic and Pre-scientific Hindu Astronomy

Under this name we propose to discuss the development of Hindu astronomy from 100 to 500 A.D. The only book that can help us in our attempt is the *Pañchasiddhāntikā* of Varāhamihira, in which he summarizes the teachings of the *Pauliśa*, *Romaka*, *Vāsishṭha* and the *Paitāmaha Siddhāntas* and makes the old *Sūrya Siddhānta* up-to-date by borrowing the astronomical constants from Āryabhaṭa I's *ārdharātrika* system. As to the five *Siddhāntas* which he summarizes, his idea of these works was as follows:

"The *Siddhānta* made by Pauliśa is accurate; near to it stands the *Siddhānta* proclaimed by Romaka; more accurate is the *Sāvitra* (*Saura*); the two remaining ones are far from the truth."[1]

We begin with an account of the most inaccurate of the *Siddhāntas*, viz. the *Paitāmaha Siddhānta*. "According to the teaching of Pitāmaha five years constitute a *yuga* of the sun and the moon. The *adhimāsas* are brought about by thirty months, and an omitted lunar day by sixty-two days."

Now, in five years there are sixty solar months; and hence according to the rule in five years there are two *adhimāsas*. The number of lunar months is 62; hence the number of *tithis* is 1860, by dividing which by 62 we get the number of omitted lunar days as 30.

Hence a luni-solar cycle of five years comprises—

(*i*) 5 revolutions of the sun.
(*ii*) 60 solar months.
(*iii*) 2 intercalary months.
(*iv*) 62 lunar months.
(*v*) 1860 lunar days or *tithis*.
(*vi*) 30 omitted lunar days.
(*vii*) 1830 civil days.
(*viii*) 67 revolutions of the moon.

[1] *Pañchasiddhāntikā*, I. 4.

These are the same as in the *Jyotisha Vedāṅga*, as we have remarked already. The *Pañchasiddhāntikā* describes the *Paitāmaha Siddhānta* in five stanzas. The first one, quoted above, contains all the astronomical constants in it. The remaining four stanzas give rules for using these elements for calculating (*a*) the number of civil days elapsed from the light half of Māgha of 2 Śaka era, (*b*) the sun's *nakshatra*, (*c*) the moon's *nakshatra* and (*d*) the number of *vyatīpātas* elapsed of the current *yuga*, and teaches that the shortest day was of 12 *muhūrtas*, and the longest day of 18 *muhūrtas*. It shows a rough method of finding the length of any given day in *muhūrtas*. The *Paitāmaha Siddhānta* does not treat of any other planets.

The next *Siddhānta* for our review is the *Vāsishṭha Siddhānta*. The teachings of this *Siddhānta* are given in chapters II and XVIII of the *Pañchasiddhāntikā*. From chapter II, stanzas 2-6, we learn that the moon moves through 111 revolutions $-\frac{3}{4}$ sign $+\frac{2}{2971}$ sign in one *ghana* period of 3031 days. We can deduce from this that the sidereal month was taken by this *Siddhānta* to consist of 27.32167063 days. It is further clear that $\frac{248}{9}$, $\frac{3031}{110}$, the two convergents to the anomalistic month were also known to its author. Hence taking the latter convergent, we get the length of the anomalistic month to be $27.55\dot{4}$ days. We can deduce also that the period of the moon's apogee is taken at 3232.873219 days. The solar year was perhaps taken to be of 365.366 days nearly. It is thus clear that a considerable progress was made in more correctly determining the luni-solar astronomical constants. With regard to the remaining five planets, their courses are treated in the order: Venus, Jupiter, Saturn, Mars and Mercury. We shall only set forth the course of Jupiter.

Days elapsed since conjunction				Jupiter's motion in longitude
60	...	...	...	12°
100	...	...	...	16°
124	...	...	...	18°
139	...	...	...	18°
199	...	...	...	12°
259	...	...	...	6°
339	...	...	...	18°
384	...	...	...	27°
414	...	...	...	42°

Similar *chāras* of the other planets are given in chapter XVIII of the *Pañchasiddhāntikā* in the first sixty stanzas.

In this oldest *Vāsishṭha Siddhānta*, we conclude, there were determined more accurate luni-solar astronomical constants; it also found for each of the five planets, Venus, Jupiter, Saturn, Mars and Mercury, several stages of their motion in longitude, from which their celestial longitudes could be calculated. This *Siddhānta* also gave rough rules for finding the *lagna* or the ecliptic point on the eastern horizon. It used the signs of the zodiac, which are absent even in the *Paitāmaha Siddhānta*.

We conclude our account of this *Siddhānta* by stating the synodic periods of the five " star " planets.

Planet				Synodic period in days
Venus	...	...	...	$584-\frac{1}{11}$
Jupiter	...	...	...	$399-\frac{1}{9}$
Saturn	...	...	...	$378-\frac{1}{11}$
Mars	...	...	...	$780-\frac{2}{45}$
Mercury	...	...	...	115 days 52n.45 $\sqrt{}$n.[1]

The *chāras* describe the direct motion, stationary stage, retrograde motion and again the direct motion. The stationary stage is described as the *anuvakra* and the retrograde stage as *vakra*. Using as it does the signs of the zodiac in place of *nakshatras*, we are inclined to understand that the old *Vāsishṭha Siddhānta* represents the oldest system of Babylonian astronomy as transmitted to India. It shows no improvement in its treatment in spherical astronomy. Chapter II of the *Pañchasiddhāntikā* states that its rules for calculation of the length of the day were as follows: The shortest day is 26 *nāḍikās* 31 *palas* in length; between the shortest and the longest day the days are supposed to increase by 3 *palas* every day. This rough rule is on a par with those given in the *Jyotisha Vedāṅga* and the *Paitāmaha Siddhānta*. The other rules for finding the longitudes of the moon and the sun and the shadow of the gnomon at midday are also all very rough. The above rules are comprised in stanzas 7-13 of chapter II of the *Pañchasiddhāntikā*. Up to the time of the *Vāsishṭha Siddhānta*, which we may take to be 300 A.D., we do not find any definite method for the calculation of eclipses.

The next *Siddhānta* belonging to the period which we are considering is the *Pauliśa Siddhānta*. So far as we can gather from the *Pañchasiddhāntikā*, it recognized that in 120 years there were 43,831 days. So the length of the year was taken to be $365.258\dot{3}$ days. The faulty texts

[1] Thibaut's Introduction to *Pañchasiddhāntikā*, p. xli.

at the places where the motion of the moon is considered prevent us from forming any idea of what it taught as to the mean motion of the moon, or what were the equations of the moon. The longitude of the sun's apogee was taken to be 80°. The equations of the sun are given in the following form:

Degrees of anomaly	= 10°	40°	70°	100°	130°	160°
Equations	= 21′	96′	139′	140′	108′	50′

From this we gather that the mean measure of the periphery of the sun's epicycle was taken at about 15° 8′, which is near to that accepted by Ptolemy, viz. 15°.

As regards the moon's other elements, we notice that the author of this *Siddhānta* knew of the same two convergents to the anomalistic month, viz. $\frac{248}{9}$ da. and $\frac{3031}{110}$ da., as were known to the author of the *Vāsishṭha Siddhānta*. We learn also that according to this *Siddhānta* the sidereal period of the revolution of the nodes was 6794.6854 days. The moon's greatest latitude was 270′ or 4°30′, as in all Indian *Siddhāntas*.

In the latter portion of chapter XVIII of the *Pañchasiddhāntikā*, Varāha gives the *chāras* or courses of the planets, Mars, Mercury, Jupiter, Venus, and Saturn, according to the teachings of this *Siddhānta*. We gather that the synodic periods of these planets were as follows:

Planet	Synodic period in mean solar days	Synodic period in civil days
Mars	$768\frac{3}{4}$ ...	779.9787 da.
Mercury	$\frac{3312}{29}$ ...	115.875 da.
Jupiter	$\frac{2752}{7}$ ...	397.968 da.
Venus	$575\frac{1}{2}$ ...	583.9061 da.
Saturn	$\frac{1118}{3}$ ...	378.11 da.

The *chāras* given are of the same type as those of the *Vāsishṭha Siddhānta*.

We next turn to the spherical astronomy of the *Pauliśa Siddhānta*. We find that the author of this *Siddhānta* knew the true method of finding the length of the day. The equation for finding the variation in the length of the day is expressed in the form:

R sin (ascensional difference) = R tan ϕ tan δ, where ϕ is the latitude of the station and δ the sun's declination.

In this *Siddhānta*, we first find the rough rules for the calculation of the eclipses. The lunar ecliptic limit is stated to be 13° and the sum

of the semi-diameter of the moon and the shadow is assumed to be 55′. The difference of their semi-diameters is 21′. Hence the semi-diameter of the moon is 17′ and that of the shadow 38′. The rule for finding the *ākshavalana* is also very rough. It is the angle between the great circles joining the centre of the moon to the celestial pole and to the north point of the observer on the horizon, and is given as $\frac{\text{zenith distance} \times \text{latitude}}{90}$, both the zenith distance of the moon and the latitude of the station being expressed in degrees. This is a very rough rule.

In the treatment of the solar eclipses, we find that parallax in longitude expressed in time, *i.e.* the time by which the observer's apparent instant of conjunction differs from the instant of the new moon, is given as $\frac{4 \times R \sin (\text{sun's hour angle})}{R}$ *ghaṭikās*, where one *ghaṭikā* = $\frac{1}{60}$ of a day and the horizontal parallax of any planet is supposed to be $\frac{1}{15}$ of its daily motion. This also is a very rough rule.

The sum of the semi-diameters of the moon and the sun was assumed to be 35′. Hence the diameter of the sun was taken as 18′.

The above is a fairly complete account of the old *Pauliśa Siddhānta* as given in the *Pañchasiddhāntikā*. It did not hint at the epicyclic theory, but it shows distinct improvement on the old *Vāsishṭha Siddhānta*. This was also a foreign system of astronomy, whether Greek or Babylonian.

We next take up the *Romaka Siddhānta*. This is also summarized by Varāhamihira in his *Pañchasiddhāntikā*. It distinctly bears a Greek name and represents perhaps the sum total of Greek astronomy transmitted to India. The luni-solar mean motions are stated in the most concise manner by Varāha thus: "The luni-solar *yuga* of the *Romaka* comprises 2,850 years; in them there are 1,050 *adhimāsas* and 16,547 omitted lunar days." From this we infer that in 2,850 years there are 10,40,953 civil days and 3,520 synodic months. The year is thus exactly of 365 da. 14′ 48″ as accepted by Ptolemy. The length of the synodic month = 29 da. 31′ 50″ 5‴ 37^{iv} = 29.5305816 days. According to Ptolemy the length of the synodic month is 29 da. 31′ 50″ 8‴ 20^{iv}. The *Romaka* synodic month agrees more closely with Āryabhaṭa I, according to whom its length = 29.530582 days.

The length of the anomalistic month is expressed as $\frac{3031}{110}$ da. = 27.554 days. The moon's motion in anomally per day = 13° 3′ 53″ 58‴ 55^{iv} 51^{v} 45^{vi}. According to Ptolemy this is 13° 3′ 53″ 56‴ 29^{iv} 38^{v} 38^{vi}. It is evident that in respect of the lengths of the synodic and anomalistic

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months, *Pauliśa*, *Romaka* and Āryabhaṭa I are very nearly in agreement. This is due to the fact that the *Pauliśa* and the *Romaka Siddhāntas* were expounded by Lāṭadeva,[1] one of the first pupils of Āryabhaṭa I.[2]

The longitude of the sun's apogee is stated to be 75°; according to Ptolemy it was 65° 30′. Here also we see the work of the expounder, but Āryabhaṭa I's longitude of the sun's apogee is 78°. It is thus a compromise between the old figure of Romaka and that of Āryabhaṭa I, the teacher of the expounder.

The sun's equations of the centre are given as follows:

Degrees of anomaly ...	15°	30°	45°	60°	75°	90°
Equation (Romaka) ...	34′ 42″	68′ 37″	98′ 39″	122′ 49″	137′ 5″	143′ 23″
Equation (Ptolemy) ...	35′	69′	97′ 30″	121′	136′	143′

I have quoted above the corresponding equations from Ptolemy to bring out the changes made by the Indian expounder or caused in transmission from the original source.

The moon's equations are as follows:

Degrees of anomaly ...	15°	30°	45°	60°	75°	90°
Equation (Romaka) ...	1° 14′	2° 25′	3° 27′	4° 15′	4° 44′	4° 56′
Equation (Ptolemy) ...	1° 11′	2° 19′	3° 19′ 30″	4° 8′	4° 49′ 30″	4° 59′

We cannot say why *Romaka* equations are slightly different from those given by Ptolemy.

Again the revolutions of the moon's nodes are stated to be 24 in 1,63,111 days; hence one revolution takes place in 6,796 days and 7 hours. According to Ptolemy this is about 6,796 days and 11 hours According to Āryabhaṭa I it is 6,794·749511 days.

The rule for parallax in longitude is the same as in the *Pauliśa Siddhānta*. The parallax in latitude is given as $= \frac{\text{Moon's daily motion}}{15} \times \frac{\text{R sin (zenith distance of nonagesimal)}}{\text{R}}$. Evidently the horizontal parallax of the moon is taken at $\frac{1}{15}$ of the daily motion, which I have been unable to trace in Ptolemy. The greatest latitude of the moon is taken in this *Siddhānta* to be 270′ as in all the Indian *Siddhāntas*; but according to Ptolemy this is about 5° or 300′. The mean semi-diameters of the sun and the moon are given to be 15′ and 17′ respectively, while Ptolemy states them to be 15′40″ and 17′40″ respectively. This practically finishes the account of the *Romaka Siddhānta* as given in the *Pañchasiddhāntikā*. It does not treat of the five other planets and represents a most fragmentary and incomplete transmission of Greek astronomy.

[1] *Pañchasiddhāntikā*, I, 3.

[2] Introduction to the *Khaṇḍakhādyaka* (Eng. trans.) by P. C. Sen Gupta, p. xix.

The last work that we have to survey in this period of the history of Hindu astronomy is the old *Sūrya Siddhānta*. A summary of a work of this name is given also in the *Pañchasiddhāntikā*, but this abridgement of Varāha cannot be taken to represent the old *Sūrya Siddhānta* as it existed before Varāha. I have proved elsewhere that he borrowed the entire set of astronomical constants from Āryabhaṭa I's *ārdharātrika* system as also the epicyclic theory from him.[1] As the writer of a practical treatise on astronomy he must give to the world something which could be safely relied on by the subsequent astronomers as producing agreement between the calculated and observed places of planets. But this he has not done. Varāha's *Sūrya Siddhānta* being thus useless in giving us the exact nature of the old *Sūrya Siddhānta*, we have to turn to the modern book and try to find the oldest strata in it. We can actually find two distinct planetary theories in the second chapter, the first of which is a cruder planetary theory which is followed by the regular epicyclic theory. The first few stanzas run as follows:

"Forms of time, of invisible shape, stationed in the zodiac, called the conjunction (*śighrochcha*), apsis (*mandochcha*) and the node (*pāta*), are the causes of the motion of the planets. The planets, attached to these beings by cords of air, are drawn away by them, with the right and left hand, foreward or backward, according to nearness, towards their own places. A wind, moreover, called provector (*pravaha*) impels them towards their apices (*uchcha*); being drawn away backward and foreward, they proceed by a varying motion. When the planets, drawn away by their apices (*uchcha*), move foreward in their orbit, the amount of motion so caused is called their excess (*dhana*); when they move backward, it is their deficiency (*riṇa*)."[2]

This represents a system of astronomy prior to and quite distinct from the epicyclic astronomy. The *uchcha* is conceived as of two classes, the first, the *mandochcha*, in the case of the sun and the moon, means the apogee, where this angular motion is slowest, and in the case of other planets it is the aphelion point of the orbit. The other type of *uchcha* is the *śighrochcha* (the apex of quick motion), which in the case of

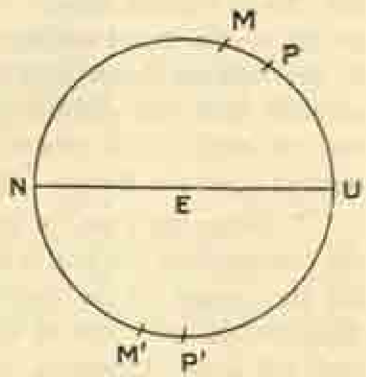
[1] "Āryabhaṭa's Lost Work," by P. C. Sen Gupta in the *Bulletin* of the Calcutta Mathematical Society, Vol. xxiii, Nos. 2 and 3. See also P. C. Sen Gupta's Introduction to the Calcutta University Reprint of Burgess's Translation of the *Sūrya Siddhānta*.

[2] Burgess's Translation of the *Sūrya Siddhānta* (Calcutta), pp. 54-55.

the superior planets coincides with the mean place of the sun, and in that of the inferior planets, is an imaginary point moving round the earth with the same angular velocity as the angular velocity of the planet round the sun; its direction from the earth is always parallel to the line joining the sun and the inferior planet.[1] The *pāta* means the ascending node of the orbit.

We first proceed to explain the action of the *mandochchas* on the mean position of the planets.

Let UPMNM′ be the circular orbit of the sun or the moon round the earth E. U the position of the god of *mondochcha* who is supposed to be sitting there facing E, the earth. When the mean planet is anywhere at M in the half circle of UMN, it is drawn to a point P which is nearer to U, the pull or rather the displacement is MP and is negative; hence according to this theory, the equation of the centre is negative from the apogee U to the perigee N. In the other half circle N P′ U, the pull is exerted by the left hand, the mean planet M′ is drawn forward to the point P′, and the equation of the centre is now positive. Thus so far as the character of the equation was concerned, this crude theory was deemed sufficient. The mean motion was thought to be produced by the planets being beaten by asterisms as described in the *Sūrya Siddhānta*, chap. I, 25-26. The strings of air by which the god of apogee produced the displacements were given the name *pravaha*. It is further evident that the ideas of 'attraction' and the consequent 'displacement' were not fully distinguished. To sum up, this represents a system of astronomy which only recognized the inequalities due to apsis and tabulated the equations according to the position of the mean planet relative to the apogee.

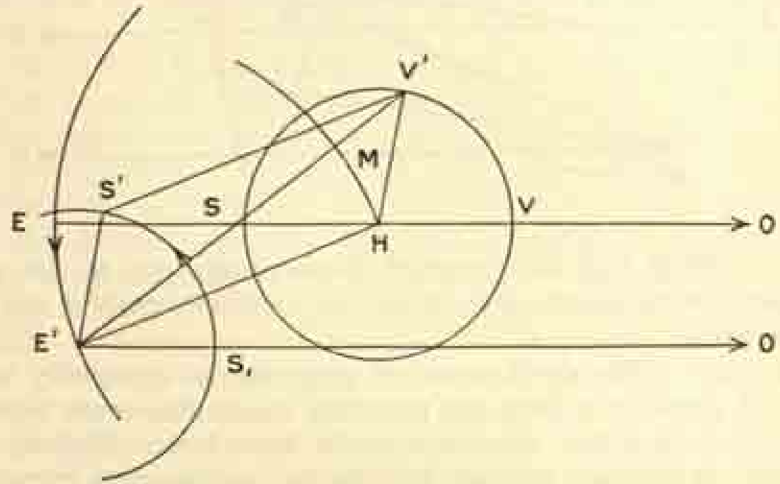


We now proceed to consider the other planetary inequality, and this was considered to take place under the attraction of the god of *śighra* or the quick apex. The older theory of the modern book also tells us that this god also draws the planet towards himself. This is now separately illustrated for inferior and superior planets.

[1] *Ibid.* i. 29 and xii. 85-86.

ŚIGHRA OF INFERIOR PLANETS

Let E, H, V be the positions respectively of the earth, the sun and an inferior planet in superior conjunction. From the line EHO, cut off ES equal to HV, the radius of the orbit of V; then S is the position of the *śighra* of V. After some days let E′ and V′ be the positions of the earth and the inferior planet. From E′ draw E′S′ equal and parallel to HV′; then S′ is the new position of the *śighra*.

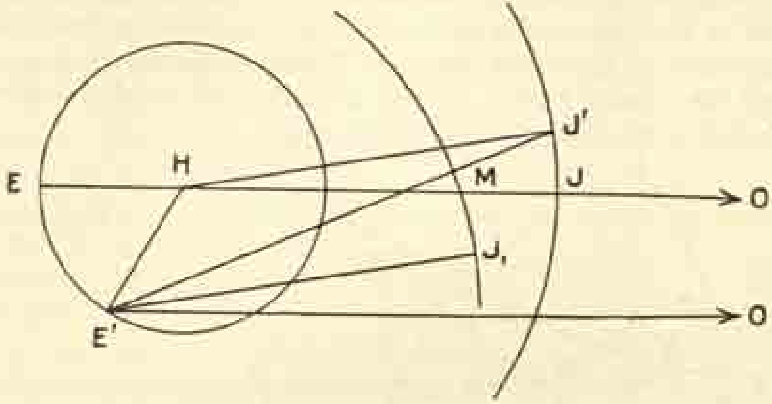


The inferior planet is seen from E′ in the direction E′V′. The *śighra* god has, as it were, drawn the mean inferior planet from the direction E′H to the direction E′V′, and the displacement produced is measured by the arc HM shown in the figure and is in the direction of S′—the line E′H is, as it were, turned towards E′S′ to the position E′V′. In other positions of E, V and S the displacements due to *śighra* are also readily explained.

ŚIGHRA OF SUPERIOR PLANETS

Let E, H, J be the positions of the earth, the sun and a superior planet at conjunction. Let E′ and J′ be the positions in the respective orbits of the earth and superior planet after some days. The superior planet is now seen in the direction E′J′ from E′. From E′ draw E′O parallel to EHJ and E′J_1 equal and parallel to HJ′. Here the *śighra* is H. The planet, instead of being seen in the direction E′J_1, is actually seen from E′ in the direction E′J′. This displacement due to the *śighra* H is represented by the angle J′E′J_1 or the arc J_1M shown in the figure. The turning of the line E′J_1 into the position E′J′ is towards E′H of the

śighra. Similarly, in other positions of E, H and J, the displacements due to *śighra* are readily explained.



It is evident that the imagined displacements due to this god of *śighra* are always towards himself and are sometimes positive and sometimes negative.

The state of the development of astronomy is apparently pre-epicyclic. It shows that both the planetary inequalities were separated, however imperfect this separation might have been. Ptolemy might claim that it was he who first separated the twofold planetary inequalities,[1] but his claim to originality should now be set aside. Even Hipparchus is now regarded more as a verifier and corrector of the Babylonian astronomy than as the maker of a new science.[2]

Having finished our explanation of the older planetary theory of *Sūrya Siddhānta* as to the action of the gods of *manda* and *śighra* on the motion of the planets, we turn to the action of the *pātas* or the ascending nodes, which is thus described:

" In like manner, also, the node *Rāhu*, by its proper (own?) force causes the deviation in latitude (*vikshepa*) of the moon and the other planets, northward and southward, from their point of declination (*apakrama*). When in the half orbit behind the planet, the node causes it to deviate northward; when in the half orbit in front, it draws it away southward. In the case of Mercury and Venus, however, when the node is thus situated with regard to the conjunction (*śighra*), these two planets

[1] Thibaut, Introduction to *Pañchasiddhāntikā*, p. lii.

[2] *Encyclopædia Britannica*, History of Astronomy, Babylonian Astronomy. Manitius also in his introduction to the edition of the *Syntaxis* repudiates the inordinate claims of Ptolemy (Teubner, Leipzig, 1913).

are caused to deviate in latitude, in the manner stated, by the attraction exerted by the node upon the conjunction (*śighra*)."[1]

This statement here unmistakably means the ascending node. In the case of the inferior planets a very great advance was made when their celestial latitude could be recognized as depending on the distance of the *śighra* from the node. This step must have had a long history behind it which is now lost.

We omit the next three stanzas which are unimportant; the next two are:

"The motion of the planets is of eight kinds: retrograde (*vakra*), somewhat retrograde (*anuvakra*), transverse (*kuṭila*), slow (*manda*), very slow (*mandatara*), even (*sama*), also very swift (*atiśighra*) and that called swift (*śighra*). Of these, the very swift (*atiśighra*), that called swift, the slow, the very slow, the even—all these five are forms of the motion called direct (*riju*); the somewhat retrograde is retrograde."

The concluding portion of the last stanza has not been properly translated by Burgess. The last sentence should have been: "What are retrograde motions have been enumerated in proximity to *anuvakra* motion." The last stanza means that the last five sorts of motion enumerated in the twelfth stanza are direct and the first three are retrograde. Burgess's observation on this is worth quoting. He says: "This minute classification of the phases of a planet's motion is quite gratuitous, so far as this *Siddhānta* is concerned, for the terms here given do not occur afterward in the text." We think he could have also said that the conception of the gods of *manda* and *śighra* for explaining planetary inequalities was equally so. But we hold with reason that these eight ways of planetary motion are a relic of a forgotten history of Hindu astronomy. Such eight-way motions of planets are thus referred to by Brahmagupta:

"A person who has said that Āryabhaṭa knew the eight-way motions of planets has made an incorrect statement."[2]

Again of these eight-way motions we find two used in the *Pañcha-siddhāntikā*, chapter XVIII, which describes what is known as *graha-chara* (the course of planets). These are the *vakra* and *anuvakra* motions; the latter motion, spoken of as taking place after the *vakra* motion (retrograde motion), is, according to the literal meaning of the term *anuvakra*, when the planet is reaching the next stationary point.

[1] Burgess, ii, 6-8.

[2] *Brāhma-sphuṭa, siddhānta*, xi. 9. Cf. also the *Bṛihat Saṁhitā*, viii. 15-16, and Bhaṭṭotpala's Commentary thereon which quotes from Vṛiddha Garga.

The next stanza of our *Siddhānta* runs as follows: "By reason of *this and that rate of motion*, from day to day, the planets thus come into accordance with their observed places (*dṛś*)—this their correction, I shall carefully explain."

The translation, though not very exact, yet sufficiently conveys the idea. After these introductory words one would naturally expect that the author would give us tables of equations of apsis of all the planets, and in the cases of the 'star planets' the different stages of their eight-way motions together with their amounts in different periods of time. Instead of this we perceive the hand of the interpolator breaking the continuity of the topic and all on a sudden bringing in a table of sines copied verbatim from the *Āryabhaṭīya*,[1] and how to use it for finding the sine and the cosine of any given arc and the converse process; the method of finding the sun's declination; how to find anomalies of apsis and of the *śighra*; the dimensions of the epicycles of either class of the planets; the methods for the calculation of the equations of apsis and of the *śighra* and how to apply them; the methods of calculating the instantaneous daily motions of planets both for the apsis and the *śighra* borrowed respectively from Āryabhaṭa I and Brahmagupta.[2] Then suddenly the older planetary theory is suffered to remain in its original form, viz:

"When at a great distance from the conjunction (*śighrochcha*), a planet, having its substance (body?) *drawn to the left and right by slack chords*, comes then to have a retrograde motion."

The older *theory of cords of air* of the gods of *manda* and *śighra* has been spared by the interpolator. The stanza shows a recognition of the fact that in the case of a superior planet the retrograde motion takes place near about the opposition, and in the case of an inferior planet near about its inferior conjunction. How this old stanza could be permitted by the interpolator to remain in the book with all its vagueness seems to us a mystery. In every preceding stanza is described the explanation of the retrograde motion under the epicyclic theory. After this we can no further find any trace of the older theory left in it.

This finishes our account of the planetary theory of the old *Sūrya Siddhānta*. It had undoubtedly the methods of calculating the eclipses and solving some problems in spherical astronomy, but we have no way of knowing what these methods were in this old *Sūrya Siddhānta* as they have all been supplanted by those of Āryabhaṭa I and Brahmagupta.

[1] Āryabhaṭa's value of 'sine' of 60° is wrong, while those of Brahmagupta and Bhāskara II are accurate.

[2] P. C. Sen Gupta's Introduction to the *Sūrya Siddhānta*, pp. xx-xxvi.



OBSERVATORY AT DELHI

As to this planetary theory, it was a mere recording of some planetary tables derived from observation, with the help of which the positions of planets could be found to a certain degree of approximation. The time when this old *Sūrya Siddhānta* came to India was about 400 A.D. and very probably it held its place of honour till 499 A.D.[1] when Āryabhaṭa I began to teach the epicyclic astronomy, and with him began the age of the Scientific Hindu astronomy.

III. Scientific Hindu Astronomy and Āryabhata I

The scientific Hindu astronomy dates from the year 499 A.D. when Āryabhaṭa I of Kusumapura (Pātaliputra or Patna), at the age of 23, began to teach astronomy to his pupils. As to the history of his science he says:

"The spotless jewel of true knowledge which lay so long sunk in the ocean of knowledge—both true and false, has been raised by me therefrom by using the boat of my own intelligence, by the grace of God whom I worship.

"The same science which was always true and went by the name of *Svāyambhuva* is now set forth under the name of *Āryabhaṭīya*. Loss of religious merit and longevity will be the share of the person who will vilify it by malicious criticisms."[2]

The first of the above two stanzas quoted indicates that by making use of a huge mass of records of observations, some of which were correct and others incorrect, Āryabhaṭa I derived the true science of astronomy, by the grace of God whom he worshipped. That his God was Brahmā he has made clear in the introductory stanza to his *Daśagītikā*; hence his science, coming as it did, according to him, as an inspiration from Brahmā, was the true *Brahma-siddhānta* of old under the name *Āryabhaṭīya*.

If there had been before Āryabhaṭa I any *Brahma-siddhānta* which was always true, we should certainly have got an account of it from Varāhamihira. The *Paitāmaha Siddhānta* as described in the *Pañcha-siddhāntika* cannot stand any comparison with the *Āryabhaṭīya*, the former being a mere beginning, while the latter is in the fully developed state of a science. Hence we conclude that the entire astronomical science as set forth in the *Āryabhaṭīya* was developed by Āryabhaṭa I himself. He cannot again be taken to have derived his science either

[1] P. C. Sen Gupta, *loc. cit.*, p. xxviii.

[2] *Gola*, 49-50.

from the old *Sūrya Siddhānta* or from the *Romaka Siddhānta*. We should have liked much to know what was the 'ocean of knowledge' containing truth and error which formed the basis of his science, and how he eliminated the errors and adopted the correct data for building up his science. He was a *sūtrakāra* or a writer of mere statements of results, and not an expounder. Hence if we look for such details, we must be disappointed. We gather that Āryabhaṭa I was not a borrower from any previous scientific writer—that he was perfectly original as regards his new science.

Amongst his direct pupils we find the mention of Pāṇḍuraṅgasvāmī, Lāṭadeva, Niśśaṅka and others. One Bhāskara, whom we refer to as Bhāskara I, was perhaps also a direct pupil of Āryabhaṭa I, or he might be a pupil of his direct pupils; he was the author of the *Laghubhāskarīya* and the *Mahābhāskarīya*, which treat of Āryabhaṭa I's system of astronomy, and also wrote a commentary on the *Āryabhaṭīya*. He is mentioned by Pṛithūdaka (786 of Śaka era or 864 A.D.) in his commentary on stanza 26, chapter X of the *Brāhma-sphuṭa-siddhānta*[1] of Brahmagupta. Of the direct pupils of Āryabhaṭa I, Lāṭadeva, the expounder of the old *Romaka* and the *Pauliśa Siddhāntas*, got the appellation of *Sarva-siddhānta-guru*, *i.e.* teacher of all the systems of *siddhāntas*. Of his other pupils of lesser fame we do not find mention in any available works. Lalla, the author of the *Śishyadhivṛiddhida*, was also regarded as a direct pupil of Āryabhaṭa I by the late Mm. Sudhakara Dvivedi, but I have proved conclusively that his time was 748 A.D.[2] Hence he was not a direct pupil of Āryabhaṭa I. This is all that we have been able to find about Āryabhaṭa I and his pupils.

We have already said that Āryabhaṭa I was original in the construction of his new science. A comparison of the astronomical constants of the Greek and the Hindu systems points unmistakably to the conclusion that the Hindu constants as determined by Āryabhaṭa I and his successors are almost in all cases different from those of the Greeks. In respect of the elements, therefore, the originality of Āryabhaṭa and other Hindu astronomers will be admitted on all hands. As regards doctrine, the materials available at present make it impossible for us to ascertain what part of it also belongs to the Hindu astronomers. We now proceed to set forth the idea of planetary motion as taught by Āryabhaṭa I.

[1] Edited by Mm. Sudhakara Dvivedi, Benares (1902).

[2] Introduction to the *Khaṇḍakhādyaka* (Eng. Trans.) by P. C. Sen Gupta, pp. xxiv-xxviii.

APPARENT MOTIONS OF THE SUN AND MOON

Āryabhaṭa says, "All planets move in eccentrics to their orbits at the mean rates of angular motion, in the direction of the signs of the zodiac from their apogees (or aphelia) and in the opposite direction from their *śighrochchas*.

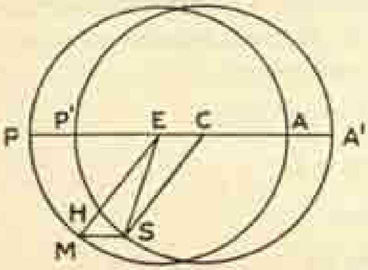
"The eccentric circles of planets are equal to their concentrics, and the centre of the eccentric is removed from the centre of the earth.

"The distance between the centre of the earth and the centre of the eccentric is equal to the radius of the planet's epicycle; on the circumference (whether of the epicycle or of the eccentric) the planet undoubtedly moves with the mean motion."[1]

ECCENTRIC-CIRCLE CONSTRUCTION

Here the central idea was that there was no doubt that the planets moved uniformly in circles round the earth; if the motion appeared to be variable, it was due to the fact that the centres of such circles (*i.e.* the eccentric circles) did not coincide with the centre of the earth.

Let E represent the centre of the earth, APM the sun's circular orbit or concentric; let A and P be the apogee and the perigee respectively. From EA, cut off EC equal to the radius of the sun's epicycle. With centre C and radius equal to EA describe the eccentric A′P′S cutting AP and AP produced at P′ and A′. Here A′ and P′ are the real apogee and perigee of the sun's orbit. Let PM and P′S be any two equal arcs measured from P and P′.



The idea is that the mean planet M and the apparent sun S move simultaneously from P and P′ in the counter-clockwise direction along the concentric and the eccentric circle respectively. They move with the same angular motion and arrive simultaneously at M and S.

[1] *Kālakriyā*, 17-19; cf. *Brāhmasphuṭa-siddhānta*, xiv, 10-12; Bhāskara II, *Golādhyāya*, V, 7, 10-32.

Here EM and CS are parallel and equal, hence MS is equal and parallel to EC. Let SH be drawn perpendicular to EM.

The angle PEM is the mean anomaly and the angle P'ES the true anomaly; the angle SEM is the equation of the centre, and is readily seen to be + from P' to A' and − from A' to P'. Thus as regards the character of the equation, the eccentric circle is quite right. We now turn to examine how far it is true as to the amount.

Let the angle SEM be denoted by E and the angle PEM = the angle P'CS $= \theta$; EP = CP' $= a$; EC = MS $= p$; then $\tan E = \frac{SH}{HE} = \frac{p \sin \theta}{a - p \cos \theta}$

$$\therefore E = \frac{p}{a} \sin \theta + \frac{p^2}{2a^2} \sin 2\theta + \frac{p^3}{3a^3} \sin 3\theta + \ldots\ldots$$

Now the true value of E in elliptic motion is given by

$$E = (2e - \frac{e^3}{4}) \sin \theta + \frac{5}{4} e^2 \sin 2\theta + \frac{13e^3}{12} \sin 3\theta \ldots\ldots$$ [1]

If we now put $\frac{p}{a} = 2e - \frac{e^3}{4}$, as a first appoximation $\frac{p}{a} = 2e$.

Hence $\frac{p^2}{2a^2} = 2e^2$, which is greater than $\frac{5}{4} e^2$ by $\frac{3}{4} e^2$. In the case of the sun, if the value of p be correctly taken, the error in the co-efficient of the second term becomes + 3'; similarly, in the case of the moon the corresponding error becomes + 8'.

Again if $\frac{p}{a} = 2e$, what is the centre of the eccentric circle is the empty focus of the ellipse; *i.e.* the ancient astronomers practically took the planets to be moving with uniform regular motion round the empty focus. This was not a bad appoximation.

Also ES $= r =$ EH approximately.

$$\therefore r = a\ (1 - \frac{p}{a} \cos \theta)$$

But in elliptic motion

$$r = a\ (1 - e \cos \theta).$$ [2]

Hence the error is not very considerable here also. This is the way in which the ancient astronomers, both Greek and Hindu, sought to explain the inequalities in motion of the sun and the moon. In the case

[1] Godfray's Astronomy, p. 149.

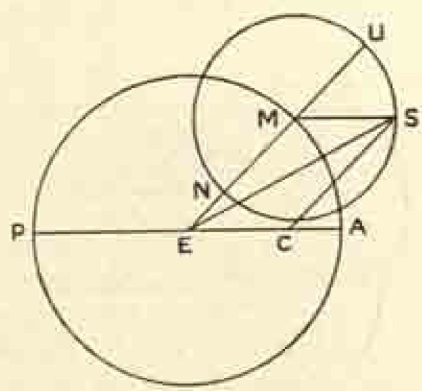
[2] *Ibid.*, p. 149.

of the moon, these astronomers took the co-efficient $2e - \frac{e^3}{4} = 300'$ nearly; the modern value of it is 377′ nearly. The reason for this has already been pointed out elsewhere,[1] that the moon was observed correctly only at times of eclipses. At the eclipses or syzygies the evection term of the moon's equation diminishes (numerically) the principal elliptic term by about 76′.

EPICYCLIC CONSTRUCTION

We have thus far explained the idea of planetary motion of the ancients under the eccentric-circle construction. The same, however, is also explained under the epicyclic construction.

Let AMP be the circular orbit of the sun, having E the centre of the earth for the centre. Let the diameter AEP be the apse line, A the apogee and P the perigee. Let M be the mean position of the sun in the orbit. With M as the centre describe the epicycle UNS. Let EM cut the epicycle at N and U. Now the construction for finding S, the apparent sun, is given thus: Make the angle UMS=the angle MEA, the arc US is measured clockwise,.whereas the arc A to M is measured counter-clockwise.



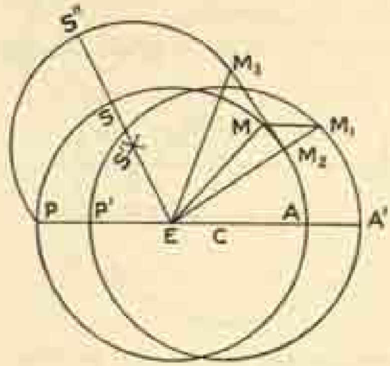
From this construction MS is parallel to EA. If EC be measured equal to MS, the radius of the epicycle, along EA towards the apogee, then CS is a constant length and C is a fixed point. Hence the locus of S is an equal circle with centre at C. Thus both the eccentric, and the epicycle and the concentric combined, led to the same position and orbit of S.

[1] Appendix I to the *Khaṇḍakhādyaka* (Eng. Trans.) by P. C. Sen Gupta, p. 162.

It was thus usual to explain the planetary motion under both the assumed constructions; and both gave the same position for a planet. The eccentric-circle construction appears to be the earlier in the history of astronomy and the latter was later. If the former construction can be traced to Apollonius of Perga who did so much to develop the conic sections as a science, the reason why he preferred the eccentric circle to the ellipse appears to be either that that planetary construction was always deep-rooted in the minds of men, or that he was carried by the idea that "the circle was the most perfect curve." We are inclined to the view that the eccentric circle idea was transmitted from Babylonia to Greece. We now pass on to consider the Hindu construction for the position of superior and inferior planets.

Superior Planets: With regard to the five planets, Mercury, Venus, Mars, Jupiter and Saturn, Āryabhaṭa I and other Hindu astronomers give only one construction for finding the apparent geocentric position. Each of these "star planets" is conceived as having a twofold planetary inequality: (*i*) the inequality of apsis, (*ii*) the inequality of the *śighra*. With regard to the superior planets, the *śighra* apogee or the *śighrochcha* coincided with the mean position of the sun. As Varāhamihira observes: "Of the other planets beginning with Mars, the sun is so-called *śighra*."[1]

Let AMSP be the concentric of which the centre E is the same as



that of the earth; $A'M_1P'$ the eccentric circle of apsis of a superior planet, of which the centre is C; A, M, S, P be respectively the apogee, the mean planet, the direction of the *śighra*, and the perigee in the concentric; A′, M_1, P′ be respectively the apogee, the planet as corrected by the equation of apsis, and the perigee in the eccentric. The arc AM=arc $A'M_1$; MM_1

[1] *Pañchasiddhāntikā*, XVII, 1.

is parallel and equal to EC. As used before, both the eccentric and the concentric are of the same radius.

Here the mean planet M in the concentric is taken to be deflected to M_1, owing to the true motion in the eccentric circle. Join EM_1, cutting the concentric at M_2. Now let ES be joined and let S′ be taken along ES, so that

$$\frac{ES'}{ES} = \frac{\text{Śighra periphery of the planet in degrees}}{360}$$

$$= \frac{\text{Sun's mean distance from the earth}}{\text{Planet's mean distance from the sun or the earth.}}$$

ES′ thus determined is called the radius of the *śighra* epicycle of the superior planet.

With S′ as the centre and radius equal to ES or EA describe another circle which is called the *śighra* eccentric cutting ES produced at S″. Now measure the arc $S''M_3$ in the eccentric equal to SM_2 in the concentric. The apparent superior planet is seen in the direction EM_3 from the earth. This is the construction used in Hindu astronomy for calculating the geocentric longitude of any star planet.

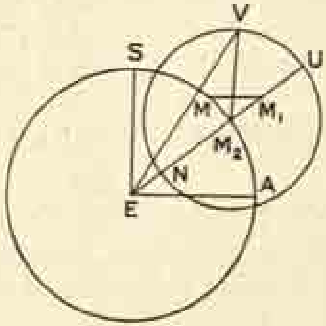
It is evident in the case of a superior planet that the eccentric which has S′ for the centre and whose radius = EA = R, the standard radius for any circular orbit, is the mean orbit of the planet and S′ the mean position of the sun. In other words, in the case of a superior planet the *śighra* eccentric represents the mean orbit round the sun. If the parallelogram CES′C′ be constructed, then an equal circle described with C′ as the centre is the apparent eccentric orbit of the superior planet.

In the actual method for calculating the geocentric longitude of a ' star planet ' there are four operations given, the first two of which have the effect of changing the arc MA or rather the point A.[2] The last two operations relate to the two displacements MM_1 and M_1M_3. We have here followed solely the construction by the eccentric circles; the same geocentric position of a superior planet could be equally well obtained by the epicyclic construction. In describing the construction for finding the position of an inferior planet we shall follow the epicyclic construction only.

[1] P. C. Sen Gupta, Translation of the *Āryabhaṭīya, Kālakriyā*, pp. 36-38, *Journal of the Department of Letters*, Vol. XVI.

[2] *Kālakriyā*, 22-24.

Inferior Planets: Let E be the centre of earth, AMS the orbit of a mean inferior planet or the mean sun, EA the direction of the apogee



of apsis and ES that of the *śighra*. The inequality of the apsis takes the mean geocentric planet from M to M_1, so that MM_1 is parallel to EA. Let EM_1 be joined cutting the concentric at M_2; M_2 is taken as the centre of the *śighra* epicycle or the real circular orbit in which the apparent planet moves.

With M_2 as the centre and the radius of the inferior planet's *śighra* epicycle as radius, describe the circle NVU which is here the *śighra* epicycle or the real circular orbit. In it draw the radius M_2V parallel to ES; then V is the geocentric position of the inferior planet.

Here the first displacement MM_1 is due to the inequality of apsis and is for finding the position of M_2, the centre of the real circular orbit. The idea was that the apparent planet moved in a circular orbit of which the centre was very near the mean position of the sun. The first operation in this construction was calculated to determine the centre of this so-called circular orbit of an inferior planet.

The *śighra* of an inferior planet moves round the earth at the same mean rate in which the inferior planet moves round the sun; hence the line ES in the figure is always parallel to the line joining the sun to the mean heliocentric inferior planet, and in our construction it is parallel to M_2V.[1]

Such in brief is an outline of the Hindu idea of planetary motion as taught by Āryabhaṭa I and his successors. In order to avoid complexity we have omitted the details. In our paper on "Āryabhaṭa" (pp. 45-52) we have indicated how the twofold inequality was separated in the case of a superior planet by the ancients. In the case of inferior planets, the

[1] P. C. Sen Gupta, Translation of *Āryabhaṭīya*, *Kālakriyā*, 17, pp. 35-36.

method perhaps was that of finding by observation when and where their greatest eastern and western elongations from the mean position of the sun were equal. These were the real methods of the ancients and there is no doubt that the Hindu astronomers followed the same methods in finding the elements of the orbits anew.

SPHERICAL ASTRONOMY OF ĀRYABHAṬA I

That the foregoing account of the planetary motion is entirely due to Āryabhaṭa I will be evident from a study of stanzas 17-25 of the *Kālakriyā*. We now put down some of the equations of spherical astronomy found in the *Āryabhaṭiya*.

$$(i)\ \text{R sin R.A.} = \frac{\text{R cos } \omega \times \text{R sin } l}{\text{R cos } \delta}$$

$$(ii)\ \text{R sin } \delta = \frac{\text{R sin } \omega \times \text{R sin } l}{\text{R}}$$

These are the two equations for finding the right ascension and declination of any point on the ecliptic of which the longitude is l. Here ω and are the obliquity of the ecliptic and the declination of the point. The first rule is given in *Gola*, 25, and the second is indicated in it.

$$(iii)\ \text{R sin (ascensional difference)} = \frac{\text{R} \times \text{R sin } \phi \times \text{R sin } \delta}{\text{R cos } \phi \times \text{R cos } \delta}$$

(*Gola*, 26)

Here ϕ is the latitude of the station, δ the sun's declination. The above three rules coupled with stanza 27 of *Gola* indicate the method by which the duration for the rising of the signs of the zodiac may be found.

(*iv*) R sin (altitude of the sun)

$$= \frac{\text{R sin (time from sunrise)} \times \text{R cos } \delta \times \text{R cos } \phi}{\text{R} \times \text{R}}$$

(*Gola*, 28)

This is a rough equation connecting the altitude of the sun and the time elapsed since sunrise. The correct equation is found in the *Pañchasiddhāntikā*, IV. 45-47, which, I trust, was first found by Āryabhaṭa's pupils. Varāhamihira was nowhere original in his *Pañchasiddhāntikā*.[1]

The next stanza (29) teaches how to find the *śaṅkvagra*, which led to the correct altazimuth equation by subsequent writers, specially

[1] P. C. Sen Gupta, Introduction to the *Sūrya Siddhānta* (Burgess's Translation), pp. xx, xxii.

Brahmagupta (628 A.D.) and Bhāskara II (1150 A.D.). The next equation obtained by Āryabhaṭa I was—

$$(v)\ \text{R sin (sun's amplitude)} = \frac{\text{R sin } \omega \times \text{R sin } l}{\text{R cos } \phi}$$

(*Gola*, 30)

$$(vi)\ \text{R sin (altitude of the sun in the prime vertical)} = \frac{\text{R sin } \omega \times \text{R sin } l \times \text{R cos } \phi}{\text{R cos } \phi \times \text{R sin } \phi}$$

(*Gola*, 31)

These equations were correctly obtained by Āryabhaṭa I. His rules for parallax in longitude and latitude are contained in stanzas 33-34, but are not intelligible owing to the faulty nature of the text.

Stanza 35 teaches us how to perform the *dṛikkarma* operations. The rule for *āksha dṛikkarma* is appoximately correct, while that for *āyana dṛikkarma* is wrong.

Stanzas 39-40 accurately express the angular diameter of the earth's shadow at the moon's orbit and 41 and 42 teach the method of finding half durations of eclipses and of total obscuration.

As his rule for *āyana dṛikkarma* is incorrect, his rule for the *āyana valana* is also incorrect. This finishes the account of Āryabhaṭa I's spherical astronomy.

We shall exhibit later on a comparison of the astronomical constants of Āryabhaṭa I and Brahmagupta and Ptolemy. The next astronomer worth mentioning was Varāhamihira.

VARĀHAMIHIRA

As I have said before, Varāha has no originality in astronomy. His redaction of the old *Sūrya Siddhānta* is a wholesale borrowing from Āryabhaṭa I's *ārdharātrika* system of astronomy and in methods is also borrowed from him.[1] But his work is valuable from the viewpoint of the history of Hindu astronomy. He mentions the name of many astronomers before him. They are: (1) Lāṭadeva or Lāṭāchārya, who was a direct pupil of Āryabhaṭa I, (2) Siṁhāchārya, of whom we know very little except that he took the astronomical day to begin from sunrise at Laṅkā,[2] (3) Āryabhaṭa I, (4) Pradyumna, who studied the motions of Mars and Saturn, and (5) Vijayanandi, who made special observations

[1] P. C. Sen Gupta, Introduction to the *Sūrya Siddhānta*, pp. ix-xii.

[2] *Pañchasiddhāntikā*, XV. 18.

of the planet Mercury.[1] This Vijayanandi was the author of a *Vāsishṭha Siddhānta*, perhaps a revision of the old *Vāsishṭha Siddhānta* of the *Pañchasiddhāntikā*,[2] as we learn from Brahmagupta. We are not quite certain whether Pradyumna and Vijayanandi were prior to Āryabhaṭa I. The other two writers mentioned by Brahmagupta in this connection are Śrīsheṇa and Vishṇuchandra who were respectively the authors of the new recasts of the *Romaka* and the *Vāsishṭha Siddhāntas*. According to S. B. Dikshita,[3] a book named *Vāsishṭha Siddhānta* has been published in Benares which mentions the name of Vishṇuchandra. Both these writers, Śrīsheṇa and Vishṇuchandra, lived after Āryabhaṭa I, as they borrowed much from him.

BRAHMAGUPTA

The next astronomer that we need consider is undoubtedly Brahmagupta (born 598 A.D.). He wrote his *Brāhma-sphuṭa-siddhānta* at the age of thirty and his other book, the *Khaṇḍakhādyaka*, was written in 665 A.D. when he was sixty-seven years old. This second work teaches easier methods of computation of the longitude of planets according to Āryabhaṭa I's *ārdharātrika* system of astronomy. In his first work we find that he has corrected all the erroneous methods of Āryabhaṭa I, and has in more than one place corrected the longitude of the nodes, apogees, and other astronomical elements of planets. Indeed after Āryabhaṭa I the next name is undoubtedly Brahmagupta, who coming 125 years after the former did not find much space left for the development of Hindu astronomy. Thus, being jealous of the great fame of Āryabhaṭa I, he made some unfair criticisms of his work. However Brahmagupta's other chief achievements were:

(1) Finding the instantaneous daily motion of planets affected both by the *manda* and *śighra* inequalities (*Brāhma-sphuṭa-siddhānta*, II).

(2) Finding the correct equations for parallax in longitude and latitude (*Ibid.* v. 2-5).

(3) Finding the altitude of the sun on the S.E. and S.W. verticals on any day (*Ibid.* iii. 54-56).

(4) More correct equations for the *Dṛikkarmas* (*Ibid.* vi. 3-4).

(5) More correct expression for the *valanas* (*Ibid.* iv. 16-18).

[1] *Pañchasiddhāntikā* XVIII. 62. [2] *Brāhma-sphuṭa-siddhānta*, xi. 48-51.

[3] *Bhāratīya Jyotiḥ-śāstra*, p. 176 (New edition). The *Vāsishṭha Siddhānta* spoken of here was perhaps published by Mm. Vindhyesvari Prasad Dube, Benares, 1881: *vide* Thibaut's Introduction to the *Pañchasiddhāntikā*, p. xxxix.

(6) Teaching the more correct method of interpolation by using the second differences (*Khaṇḍakhādyaka*, ix. 8, 12-13).

Indeed his methods etc., have been accepted by all the subsequent famous astronomers like Bhāskara II (1150 A.D.) as also by the new redactions of the *siddhāntas* (modern) which are held as revelations.

We do not propose to attempt for the present to describe the works of other Hindu astronomers of fame in the domain of this science.

SIDDHANTAS AS REVELATIONS

In the foregoing review I have not said anything as to the position of these books in Hindu astronomy. In my introduction to the Calcutta University reprint of Burgess's translation of the *Sūrya Siddhānta*, I have established that this book belongs to no definite time and is valueless from a historical point of view. It has had a composite growth from 400 to 1105 A.D. The other extant *Siddhāntas* are also dependent on the writings of our famous astronomers from the time of Āryabhaṭa I to that of Brahmagupta. These works are more or less of a fragmentary character and hence incomplete. Some of these have been published by Mm. Vindhyesvari Prasad Dvivedi of Benares. These are the *Soma Siddhānta*, the *Brahma Siddhānta* of the *Śākalya Saṁhitā*, *Paitāmaha Siddhānta* of the *Vishṇudharmottara Purāṇa*, the *Vṛiddha Vāsishṭha Siddhānta*, etc. The authors of these books have not only done injustice to our great astronomers, Āryabhaṭa I and his pupils, Varāhamihira, Brahmagupta, etc., but to some extent to themselves as well by hiding their own names and times. We are not enabled even to honour them where honour is their due. If we examine the third book named above critically, we readily come to the conclusion that it represents almost a wholesale borrowing of the important portions of the *Brāhma-sphuṭa-siddhānta* of Brahmagupta, and that by a person who had absolutely no pretension to originality and whose style of Sanskrit appears ludicrous. A similar examination of the next book would lead us to the conclusion that it was written by some unknown person after the time of Bhāskara II.

We must state here that Āryabhaṭa I was the author of the two distinct systems of astronomy, the *audayika* and the *ārdharātrika*. In the first the astronomical day begins at the mean sunrise at Laṅkā and in the other it begins at the mean midnight. The matter has been fully dealt with in my introduction to the English translation of the *Khaṇḍakhādyaka*, pp. x-xvi. The *Āryabhaṭīya* of Āryabhaṭa I teaches the *audayika* system and the *Khaṇḍakhādyaka* the *ārdharātrika* system.

THE ORIGINALITY OF HINDU ASTRONOMY

The date of scientific Hindu astronomy is 421 years after the Śaka era, or 499 A.D., the time of Āryabhaṭa I; but we can show that it is not a wholesale borrowing either from the Babylonian or the Greek science.

First of all, in planetary theory the term *śighra* or the 'apex of quick motion' has not the same meaning as 'conjunction,' with which it has been identified. Then the term *mandochcha,* the point or 'apex of slowest motion,' does not mean a point furthest from the earth as 'apogee' does, though *uchcha* means 'a high place.' Thus the meaning of the term *śighrochcha* or *mandochcha* should show some originality of idea of the Hindu astronomers. We are not urging that the Hindu epicyclic astronomy, as it was developed by Āryabhaṭa I and his pupils, was quite uninfluenced by Babylonian and Greek sciences as they came to India. The chief difficulty in finding out how far the Hindu astronomers were original as regards planetary theory appears unsurmountable. As we have already said, they were *śūtrakāras* or writers of aphorisms, who have only stated their results, but not the methods by which they obtained them. These methods were at first transmitted through generations of teachers, and in the course of ages they were all lost. Āryabhaṭa I has condescended to give only one stanza as regards his astronomical methods: "The day-maker has been determined from the conjunction of the earth (or the horizon) and the sun; and the moon from her conjunctions with the sun. In the same way the 'star planets' have been determined from their conjunctions with the moon" (*Gola*, 48). The stanza has been considered in detail by me in the *Bulletin* of the Calcutta Mathematical Society, Vol. XII, No. 3, where it has been shown that by these methods the sidereal periods of sun, Mars, Jupiter and Saturn, and the synodic month, and hence the sidereal months, may be determined. Also the geocentric sidereal periods of Mercury and Venus may be found to be the same as the sidereal period of the sun.

No other Hindu astronomer has left us anything of their astronomical methods. In 1150 A.D. Bhāskara II tried to explain how the number of sidereal revolutions of 'planets' could be verified,[1] but his expositions are not satisfactory and in places faulty. We cannot for want of space examine them here. We accordingly confine ourselves to a comparative presentation of the Hindu and Greek astronomical constants.

[1] *Grahagaṇita, Bhagaṇādhyāya,* Comm. on I. 5.

ELEMENT	Modern value (mean)	*Āryabhaṭīya*	*Khaṇḍa-khādyaka*	*Brāhma-sphuṭa Siddhānta*	Ptolemy	REMARKS
Year, Sidereal ...	da. 365.2563604	da. 365.2586805	da. 365.25875	da. 365.2584375	da. 365.2631579 (Meton)	Precessional rate for Sid. year.
" Tropical ...	365.2421988	......	......	......	365.246'	Hindu $\frac{2^\circ}{121}$ per year (i). Do. for Tropical year, Ptolemy...36" per year (ii).
Long. of sun's apogee ...	101°13' (1900 A.D.) 77°19' (500 A.D.)	78° (499 A.D.)	80° (499 A.D.)	77° (499 A.D.)	65°30'[1] (150 A.D.)	Hindu value more accurate than Ptolemy who errs by 5°36'.
Sun's equation of apsis for 90° of mean anomaly ...	1°55'10"	2°8'54"	2°14'0"	2°7'20"	2°23'3"	Hindu equation more correct.
Synodic month ...	da. 29.5305881 da.	da. 29.530582 da.	da. 29.5305874 da.	da. 29.530582 da.	da. 29.5305927 da.	*Khaṇḍakhādyaka* synodic month shows closest appoximation.
Sid. period of moon's apogee ...	3232.37543	3231.987070	3231.987844	3232.73411	3232.617656	
Sid. period of moon's node	6793.39108	6794.749511	6794.750834	6792.25396	6796.45571	Max. error in Greek value.
Inclination of lunar orbit	5°8'43"	4°30'	4°30'	4°30'	5°	Greek value more accurate.
Moon's Hor. Parallax ...	57'2".79	52'30"	52'42".3	51'42".3	53'24"	Ancient values all inaccurate but independent.
Sun's Hor. Parallax ...	0'8".806	3'55".62	3'56".3	3'56".5	2'57"	Do.
Moon's semi-diameter ...	15'33".60	15'45"	16'0".32	16'0".32	17'40"	Do.
Sun's semi-diameter ...	16'1".3	16'29".4	16'15"	16'15"	15'40"	Do.

NOTE: For the Hindu equations of the moon, the reader is referred to Appendix I to my translation of the *Khaṇḍakhādyaka*, Cal. Univ. Press. [1] The *Romaka Siddhānta* of the *Pañchasiddhāntikā* states the longitude of the sun's apogee to be 75° for the year 565 A.D. (*Pañchasiddhāntikā*, vii. 2).

ELEMENT	Modern value (mean)	*Āryabhaṭīya*	*Khaṇḍa-khādyaka*	*Brāhma-sphuṭa Siddhānta*	Ptolemy	REMARKS
Synodic Revolutions:	da.	da.	da.			
Mercury	115.877	115.8761	115.8785	115.8784	115.8786	Agreements, if any, denote common source; while differences show independent determinations with personal error of observation.
Venus	583.920	583.8975	583.8976	583.8968	584.0000	
Mars	779.936	779.9211	779.9212	779.9222	779.9428	
Jupiter	398.867	398.8895	398.8897	398.8895	398.8864	
Saturn	378.090 (Lockyer)	378.0859	378.0867	378.0860	378.0930	
Longitude of apogee:	Calculated for 500 A.D.	(499 A.D.)	(499 A.D.)	(499 A.D.)		These figures show the independence of Hindu astronomers; the differences cannot be made up by the precession rate (36″ per year) of Ptolemy.
Saturn	243°40′	236°	240°	252°	224°10′	
Jupiter	170°22′	180°	160°	170°	152°9′	
Mars	128°28′	118°	110°	127°	106°40′	
Venus	290°4′	90°	80°	90°	46°10′	
Mercury	234°11′	210°	220°	227°	181°10′ (Manitius)	
Longitudes of Nodes:	Calculated for 500 A.D.	(499 A.D.)	(499 A.D.)	(499 A.D.)		
Saturn	100°32′	100°	100°	103°14′	90°	
Jupiter	85°13′	80°	80°	82°2′	70°	Do.
Mars	37°49′	40°	40°	38°35′	30°	
Venus	63°16′	60°	60°	224°14′(?)	55°	
Mercury	30°35′	20°	20°	52°44′(?)	10° (Fotheringham)	

ELEMENT	Modern value (mean)	*Āryabhaṭīya*	*Khaṇḍa-khādyaka*	*Brāhma-sphuṭa Siddhānta*	Ptolemy	REMARKS
Dimensions of epicycles of apsis:						
Saturn	......	40°½ to 58°½	60°	30°	42°48′	Differences show the independence of Hindu astronomy.
Jupiter	......	31°½ to 36°½	32°	33°	32°18′	
Mars	......	63° to 81°	70°	70°	78°42′	
Venus	......	18° to 9°	14°	4° to 11°	15°	
Mercury	......	22°½ to 36°	28°	38°	18°	
Dimensions of epicycles of conjunction (*śīghra*):						
Saturn	......	36°½ to 40°	40°	35°	39°	
Jupiter	......	67°½ to 70°	72°	68°	69°	
Mars	......	229°½ to 256°½	234°	243°40′	237°	Do.
Venus	......	265°½ to 256°½	260°	258°62′63″	259°	
Mercury	......	130°½ to 139°	132°	132°	135°	

It will appear from the above presentation that the Hindu values of the astronomical constants are almost all different from their Greek values. Hence both the systems must be independent of each other. There is no doubt that the Greek astronomy had come to India before the time of Āryabhaṭa I, and Varāha has given us a summary, in his *Pañchasiddhāntikā*, of what was known by the name of the *Romaka Siddhānta*, but we do not find anything of the epicyclic theory in it. A verbal transmission of the idea of that theory, together with that of a few astronomical terms from a foreign country, was quite possible. It must be said to the credit of Hindu astronomers that they determined all the constants anew. Even in the lunar theory, Mañjula (932 A.D.) discovered the second inequality, and Bhāskara II (1150 A.D.) the third inequality, viz. "variation."[1] The Hindu form of 'evection equation' is much better than that of Ptolemy, and stands on a par with that of Copernicus.[2] It is from some imperfections also that this independence may be established; for instance, the early Hindu astronomers up to the tenth century A.D. recognized only one part of the equation of time, viz. that due to the unequal motion of the sun along the ecliptic, when in 1028 A.D. Śrīpati first discovered the part of it due to the obliquity of the ecliptic.[3] In Greek astronomy both the parts were detected by Ptolemy. Further, in my paper on "Greek and Hindu Methods of Spherical Astronomy"[4] I have established that the Hindu astronomers were in no way indebted to the Greeks in this part of the subject; the methods of the former were indeed of the most elementary character, while that of Ptolemy was much advanced and more elegant; yet the Hindu astronomers could solve some problems where Ptolemy failed, viz. to find the time by altitude and to find the altitude from the sun's azimuth. For this the reader is referred to my paper mentioned above.

We thus come to the conclusion that although scientific Hindu astronomy is dated much later than the time of Ptolemy, barring the mere idea of an epicyclic theory from outside, its constants and methods are all original. Even the term *śighra* (the apex of quick motion), which has been wrongly translated by the word "conjunction," shows that the Hindu angle of vision was quite different from the Greek, while the idea of the gods of *manda* and *śighra* presents a phase of growth of the science before the epicyclic theory came into being, be the idea Hindu or Babylonian.

[1] P. C. Sen Gupta, Appendix to *Khaṇḍ*. [2] Godfray's Lunar theory, Hist. appendix.
[3] Introduction to the *Siddhānta-śekhara* edited by Pt. Babua Misra, Cal. Univ. Press.
[4] *Cal. Univ. Jour. of the Dept. of Letters* Vol. XXI, also Appendix II to the *Khaṇḍ*.

VEDIC MATHEMATICS

INTRODUCTORY

Once upon a very ancient time the sage Nārada approached the holy saint Sanatkumāra and begged of him the *Brahma-vidyā* (Supreme Knowledge). Sanatkumāra asked Nārada, so runs the narrative in the *Chhāndogya Upanishad*,[1] to state first what he had already learned so that he (Sanatkumāra) might judge what still remained to be learnt by him. Thereupon Nārada enumerated the various sciences and arts mastered by him besides religious and philosophical works: "O Lord, I have read the *Ṛig-Veda*, the *Yajur-Veda*, the *Sāma-Veda*, fourth the *Atharva-Veda*, fifth the history and chronicles (*Itihāsa-Purāṇam*), the science of grammar,[2] the science of rituals, the science of numbers,[3] natural sciences,[4] the science of chronology,[5] the science of logic,[6] the science of polity,[7] the science of etymology,[8] the sciences cognate to the Vedas,[9] the science of spirits, archery,[10] the science of astronomy,[11] the science of antidotes,[12] and the fine arts.[13] All these I know, O Lord."[14]

The same story reappears in the *Mahābhārata*,[15] though in a slightly different garb. Here sage Bṛihaspati enquires of his preceptor, what is

[1] vii. 1.1 *et seq.*

[2] The Sanskrit original is *Vedānāṁ Vedaṁ*, which literally means "the Veda of Vedas." Grammar is so called, observes Śaṅkara, because the Vedas are understood by means of it.

[3] *Rāśi-vidyā*, "arithmetic and algebra."

[4] *Daiva-vidyā*, "the science which treats of natural phenomena."

[5] *Nidhi*, "the science which treats of the division of time into *mahā-kāla*, *kāla*, etc." (Śaṅkara), that is, "the science of time." The Sanskrit word *nidhi* also means "treasures," "valuable stones." So what is meant here is more probably "the science which treats of the mining, examination, etc., of valuable stones."

[6] *Vākovākya*.

[7] *Ekāyana*.

[8] *Deva-vidyā*=*Nirukta* or "the science of etymology" (Śaṅkara).

[9] *Brahma-vidyā*=*Sikshā*, *Kalpa*, etc. (Śaṅkara).

[10] *Kshatra-vidyā*=*Dhanur-vidyā* (Śaṅkara). But literally it means "the science of the warrior class," that is, "the science of wars" which of course then included archery.

[11] *Nakshatra-vidyā*, meaning literally "the science of stars."

[12] *Sarpa-vidyā*, "the science treating of serpents and their venoms."

[13] *Devajana-vidyā*, "the sciences of making essences, singing, music, architecture, painting, etc." (Śaṅkara).

[14] *Chhāndogya Upanishad*, vii. 1.2, 4, etc.

[15] *Sānti Parva*, Ch. 201.

the Prime Cause of this universe? What is the result of knowledge? Is there anything not to be found in the Veda? etc. He also stated what he had already studied with a view to getting satisfactory solutions of his problems. This list is very much shorter than that in the *Chhāndogya Upanishad*. Still it includes celestial mechanics.[1] This "ancient story" (*itihāsaṁ purātanam*) was narrated by the great Kuru general Bhishma to Emperor Yudhishṭhira.

From stories like these we learn that the early Hindus did not look upon the culture of the science of mathematics or of any other branch of what we now call secular knowledge as a hindrance to what we designate as spiritual knowledge. In fact, the *Aparā-vidyā* (inferior knowledge, relative truths) including the various arts and sciences, has been openly preached in the *Muṇḍaka Upanishad*[2] to be a helpful adjunct to the *Parā-vidyā* (Supreme Knowledge), *satyasya satyam* (Truth of truths, Absolute Truth).

The enumerated list in the *Chhāndogya Upanishad*, as noted above, gives a fair idea of the various arts and sciences cultivated by the Vedic Hindus. Of them the science of mathematics (*Gaṇita*, meaning literally, the Science of Calculation) was considered to be the most superior. Thus it was said, "As are the crests on the heads of peacocks, as are the gems on the hoods of snakes, so is the *Gaṇita* at the top of the sciences known as the *Vedāṅga*."[3] At that remote period the *Gaṇita* included astronomy, arithmetic and algebra, but not geometry. Geometry then belonged to a different group of sciences known as the *Kalpa*.[4]

The Vedic Hindus evinced special interest, as far as we know at present, in two particular branches of mathematics, viz. geometry (*Śulba*) and astronomy (*Jyotisha*). Reasons for that will be found in the philosophy of their culture. They wished always to be as accurate and thorough as possible. It is clearly in evidence in every sphere of their activities. The sacrifice was the prime religious avocation of the Vedic Hindus. Each sacrifice had to be made on an altar of prescribed size and shape. They became very strict and rigorous as regards this.

[1] *Nakshatra-gati*, literally "The Science of Motion of Stars."

[2] i.1. 3-5.

[3] *Vedāṅga Jyotisha*, verse 4.

[4] See the author's article on "The Scope and Development of the Hindu *Gaṇita*" (*Indian Historical Quarterly*, Vol. V, 1929, pp. 479-512).

They began to think that even a slight irregularity in the form and size of the altar would nullify the object of the whole ritual and might even lead to an adverse effect. So the greatest care had to be taken to have the right shape and size of the sacrificial altar. Thus originated problems of geometry and consequently the science of geometry. The study of astronomy began and developed chiefly out of the necessity for fixing the proper time for the sacrifice. This origin of the sciences as help to religion, it may be remarked in passing, is not at all unnatural. For it is generally found that the interest of a people in a particular branch of knowledge, in all climes and times, has always been aroused and guided by specific reasons. In the case of the Vedic Hindus that specific reason was religious. In course of time, however, those sciences outgrew their original purposes and began to be cultivated for their own sake.

Available sources of Vedic mathematics are very poor. Almost all the works on the subject have perished. At present we find only a very short treatise on Vedic astronomy in its three recensions, namely, *Ārcha Jyotisha*, *Yājusha Jyotisha* and *Ātharva Jyotisha*. There are six small treatises on Vedic geometry belonging to the six schools of the Veda. So for an insight into Vedic mathematics we have now to depend more on secondary sources such as the literary works.

ASTRONOMY

There is a considerable mass of astronomical matter in the Vedic Saṁhitās. But everything is shrouded in such mystic expressions and allegorical legends that it has now become extremely difficult for us, who are so far away from the Vedic age and its cultural spirit as to have long completely lost the old thread of the traditional method of interpretation, to discern its proper significance. Hence it is not strange that the modern Vedic scholars differ widely in valuating the astronomical achievements of the early Vedic Hindus. Much progress seems, however, to have been made in the Brāhmaṇa period, when astronomy came to be regarded as a separate science, *Nakshatra-vidyā* (the science of stars) by name. An astronomer is called the *nakshatra-darśa* (star-observer) or *gaṇaka* (calculator).

In the *Ṛig-Veda* (i.115.1; ii.40, etc.), the universe is regarded as comprised of three regions, *pṛithivī* (earth), *antariksha* (sky, literally meaning the region below the stars) and *div* or *dyaus*

(heaven). Each of these is again subdivided into three parts (iv.53.3): cloud, lightning and wind belong to the sky; sun, moon, planets and stars to the heaven. The distance of the heaven from the earth has been stated differently in different works. The *Ṛig-Veda* (i.52.11) gives it as ten times the extent of the earth, the *Atharva-Veda* (x.8.18) as a thousand days' journey for the sun-bird, the *Aitareya Brāhmaṇa* (ii.17) as a thousand days' journey for a horse, and the *Pañchaviṁśa Brāhmaṇa* once (xvi.8.6) as the distance equivalent to a thousand cows one standing on the other, and again (xxi.1.9) as a thousand leagues, besides the two former estimates. All these are evidently figurative modes of expressing that the extent of the universe is infinite.

It appears from the *Ṛig-Veda* that the earth was known to be spherical in shape (i.33.8) and suspended freely in the air (iv.53.3). The *Śatapatha Brāhmaṇa* states it expressly as *parimaṇḍala* (globe or sphere). There is also speculation about the extent of the earth (i.123). Professor Tarakeswara Bhattacharya,[1] followed by Dr. Ekendranath Ghosh,[2] maintains that there are evidences of the axial rotation and the orbital motion of the earth. These motions are caused by the sun. Long before them Ludwig pointed out from the *Ṛig-Veda*, evidences of the annual revolution of the earth about the sun.

There is only one sun (*Ṛig-Veda*, vii. 58.2) who is the maker of the day and night, the twilight, month and year. It is the cause of the seasons (i.95.3). It has seven rays (i. 105.9; i.152., etc.). They are clearly the seven colours of the sun's rays. The sun is the cause of winds, says the *Aitareya Brāhmaṇa* (ii.7). It states (iii.44) further: "The sun never sets nor rises. When people think to themselves the sun is setting, he only changes about after reaching the end of the day, and makes night below and day to what is on the other side. Then when people think he rises in the morning, he only shifts himself about after reaching the end of the night, and makes day below and night to what is on the other side. In fact he never does set at all" (Haug's translation). This theory occurs probably in the *Ṛig-Veda* (i.125.5) also. The sun holds the earth and other heavenly bodies in their respective places by his mysterious power.

[1] See *Bhāratavarsha*, 1326 B.S., Vol. VII., Pt. I. pp. 729 ff.

[2] Dr. Ekendranath Ghosh, "Studies in Ṛig-Vedic Deities—Astronomical and Meteorological," *Journal of the Asiatic Society of Bengal*, 1932, reprint, p. 11.

In the *Ṛig-Veda*, Varuṇa is stated to have constructed a broad path for the sun (i.28.8), called the path of the *ṛita* (i.41.4). This evidently refers to the zodiacal belt. Ludwig thinks that the *Ṛig-Veda* mentions the inclinations of the ecliptic with the equator (i.110.2) and the axis of the earth (x.86.4). The apparent annual course of the sun is divided into two halves, the *Uttarāyaṇa*, when the sun goes northwards and the *Dakshiṇāyana*, when it goes southwards. As has been shown by B. G. Tilak, according to the *Śatapatha Brāhmaṇa* (ii.1.3.1-3), the *Uttarāyaṇa* (progress to the north) begins from the vernal equinox. So it used to be considered in earlier times. But it is clear from the *Kaushītaki Brāhmaṇa* that those periods begin respectively from the winter and summer solstices, as at present. The ecliptic is divided into twelve parts or signs of the zodiac, corresponding to twelve months of the year, the sun moving through the successive signs during the successive months. The sun is called by different names at different parts of the zodiac, and thus has originated the doctrine of twelve *ādityas* or suns.

The *Ṛig-Veda* (ix.71.9; 76.4, etc.) says that the moon shines by the borrowed light of the sun. The phases of the moon and their relation to the sun were fully understood. Five planets seem to have been known.[1] Planets *Śukra* or *Vena* (Venus) and *Manthin* are mentioned by name.

The *Ṛig-Veda* mentions 34 ribs of the horse (i.162.16) and 34 lights (x.55.3). Ludwig and Zimmer think that these refer to the sun, moon, 5 planets and 27 *Nakshatras*. But others have differed. However, the *Taittirīya Saṁhitā* and other works have expressly mentioned 27 *Nakshatras*. The Vedic Hindus observed mostly those stars which lie near about the ecliptic. They noted very few stars lying outside that belt. Probably they did not search for others. The relation between the moon and *Nakshatras* is conceived as a marriage union. In the *Taittirīya Saṁhitā* (ii.3.5.1-3) and *Kāṭhaka Saṁhitā* (xi.3) it is expressly stated that the moon is wedded to the *Nakshatras*. Later on when Abhijit became the pole-star, it was introduced amongst the *Nakshatras*, so that their number rose to 28. In course of time when Abhijit ceased to be the pole-star, it was left out, and the number of *Nakshatras* again came to be 27. The ecliptic was divided into 27 (or 28) parts, corresponding to the *Nakshatras*, through each of which the moon moves daily in its monthly course in the heaven.

[1] For views of different scholars about it, see Macdonell and Keith, *Vedic Index*, I, p. 241.

It appears from the *Taittirīya Brāhmaṇa* (i.5.2.1) that the Vedic astronomer ascertained the motion of the sun by observing with his unaided eye the nearest visible stars rising and setting with the sun, from day to day. As has been noted before by Tilak,[1] "The passage is very important as it describes the method of making celestial observations in old times." Observations of several solar eclipses are mentioned in the *Ṛig-Veda*. It is described (v.40.5-9) that Atri observed a total eclipse of the sun, caused by the Svarbhānu covering the sun, by means of an instrument called the *turīya*. He could calculate the occurrence, duration, beginning and end of an eclipse. His descendants also were particularly conversant with the calculation of eclipses.[2] In the *Atharva-Veda* (xix.9.10), the eclipse of the sun is stated to be caused by Rāhu. In the time of the *Ṛig-Veda*, the cause of the solar eclipse was truly understood as the occultation of the sun by the moon. There is also mention of lunar eclipses.

In the Saṁhitā, the seasons in a year are generally stated to be five in number, namely, the *vasanta* (spring), *grishma* (summer), *varshā* (rains), *śarat* (autumn) and *hemanta-śiśira* (winter). Sometimes the *hemanta* and *śiśira* are counted separately, so that the number of seasons in a year becomes six. Occasionally is found the mention of a seventh season.[3] The seventh season is most probably the intercalary month and hence it is called "single born," whilst others are "twins" (that is, comprised of two months each). The Vedic Hindus used to count the beginning of a season on the sun's entering a particular asterism. After a long interval of time, it was observed that the same season began with the sun entering a different asterism. Thus they discovered the falling back of the seasons with the position of the sun among the asterisms. There are clear evidences of it in the Vedic literature. The *vasanta* (spring) used to be considered the first of the seasons as well as the beginning of the year.[4] There is a myth in the *Taittirīya Saṁhitā* (vi.1.5.1), which appears also in the *Aitareya Brāhmaṇa* (i.7), that Aditi, the presiding deity of the Punarvasu *Nakshatra*, is blessed with a boon that all sacrifices should begin and end with her. This clearly refers to the position of the vernal equinox in

[1] B. G. Tilak, *Orion*, p. 33.

[2] See *Atharva-Veda*, xiii. 2.4; 12.36; *Śatapatha Brāhmaṇa*, iv. 3.4.21; also Tilak, *Orion*, p. 33.

[3] For instance see *Ṛig-Veda*, i.164.5; *Atharva-Veda*, vi.61.2.

[4] *Taittirīya Brāhmaṇa*, i.1.2.6-7; iii.10.4.1.

the asterism Punarvasu. There are also evidences to show that the vernal equinox was once in the asterism Mṛigaśirā and thence, in course of time, it receded to Kṛittikā. In so doing it must have gone through Rohiṇī. This has been described as Prajāpati (the deity of the vernal equinox) going after his daughter Rohiṇī. And for that reprehensible misconduct he has been severely censured by others. Thus there are clear evidences in the Saṁhitās and Brāhmaṇas of the knowledge of the precession of the equinox. Dhirendranath Mukhopadhyaya[1] and Dr. Ekendranath Ghosh[2] think that the Vedic Hindus also knew the equation of time.

GEOMETRY

In the *Śulba* (Geometry) the Vedic Hindus solved propositions about the construction of various rectilineal figures, combination, transformation and application of areas, mensuration of areas and volumes, squaring of the circle and *vice versa*, and about similar figures.[3] One theorem which was of greatest importance to them on account of its various applications is the 'Theorem of the Square of the Diagonal.' It has been enunciated by Baudhāyana (800 B.C.) thus: "The diagonal of a rectangle produces both (areas) which its length and breadth produce separately."[4] That is, the square described on the diagonal of a rectangle has an area equal to the sum of the areas of the squares described on its two sides.

The corresponding theorem for the square has been enunciated separately, though it is in fact a particular case of the former: "The diagonal of a square produces an area twice as much."[5] That is to say, the area of the square described on the diagonal of a square is double the area of that square.

The converse theorem—if a triangle is such that the equare on one side of it is equal to the sum of the squares on the two other sides, then

[1] Dhirendranath Mukhopadhyaya, "Notes on Hindu Astronomy," *Journal of the Department of Letters in the Calcutta University*, Vol. V.

[2] Ekendranath Ghosh, "Was the equation of time known to the Vedic sages?" *Indian Historical Quarterly*.

[3] More information on early Hindu Geometry will be found in the author's book, *The Science of the Śulba—A Study in Early Hindu Geometry*, Calcutta, 1932. This book will be henceforth referred to as Datta, *Śulba*.

[4] *Baudhāyana Śulba*, i.48. The theorem has been enunciated in almost identical terms by other Vedic geometers such as Āpastamba and Kātyāyana (*c*.500 B.C.). See *Āpastamba Śulba*, i.4; *Kātyāyana Śulba*, ii.11.

[5] *Baudhāyana Śulba*, i.45; *Āpastamba Śulba*, i.5, *Kātyāyana Śulba*, ii.12.

the angle contained by these two sides is a right angle—is not found to have been expressly defined by any *Śulbakāra* (Geometrician). But its truth has been tacitly assumed by all of them and it has been most freely employed for the construction of a right angle.

The theorem of the square of the diagonal is now generally associated with the name of the Greek Pythagoras (*c*.540 B.C.), though even such a pro-Greek historian of mathematics as Sir T. Heath has to admit, " No really trustworthy evidence exists that it was actually discovered by him."[1] The tradition which attributes the theorem to him began five centuries after Pythagoras and was based upon a vague statement which did not specify this or any other great geometrical discovery as due to him. This led some eminent historians of mathematics such as Hankel and Junge to deny to Pythagoras the discovery of the theorem. On the other hand the Hindu Baudhāyana (800 B.C.), in whose *Śulba* we now meet with the general enunciation of the theorem, was much anterior to the Greek Pythagoras. Instances of application of it occur in the *Baudhāyana Śrauta*[2] and *Śatapatha Brāhmaṇa*[3] (*c*.2000 B.C.). There are reasons to believe it to be as old as the *Taittirīya* and other *Saṁhitās* (*c*.3000 B.C.).[4]

With Bürk, Hankel and Schopenhauer we are definitely of opinion that the early Hindus knew a geometrical proof of the theorem of the square of the diagonal. In our *Science of the Śulba* we have adduced evidence in support of it. It is very probable, as is also natural, that

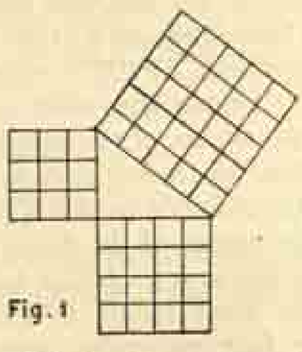


Fig. 1

[1] T. Heath, *History of Greek Mathematics*, in two volumes, Cambridge, 1921, Vol. I, pp. 144 ff.

[2] *Baudhāyana Śrauta*, x.19; xix.1; xxvi.

[3] *Śatapatha Brāhmaṇa*, x.2.3.7-14.

[4] Datta, *Śulba*, pp. 120 ff.

the truth of the theorem was first perceived and proved in the case of rational rectangles and then generalized and found to be true universally.

On actually drawing the squares on the sides and diagonal of such a rectangle and dividing them into elementary squares it will be easily found by calculation that the square on the diagonal is equal to the sum of the squares on the sides (Fig. 1).

As regards the geometrical proof it will be natural to presume that the proof of the simpler theorem of the square of the diagonal of a square was discovered first. And it seems to have been discovered in the figure of the *Paitṛiki-vedi*.

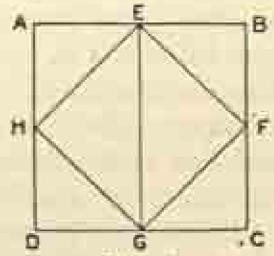


Fig. 2

Here the required square figure *EFGH* is obtained by joining the middle points of the sides of a square *ABCD* drawn previously. The square *ABCD* is known to be twice the square *EFGH* in area. It was the usual practice of the Vedic geometers in constructing a square (or indeed any other regular figure of given sides) to do it in such a way as to make it lie symmetrically on the east-west line *EG*. This *EG* is again the diagonal of the newly formed square *EFGH*. Thus the square *ABCD* on the diagonal *EG* of the square *EFGH* is twice the square *EFGH*. So this figure leads in a very simple and vivid way to the discovery and proof of the theorem of the square of the diagonal of a square.

How the early Hindus proceeded next to find a general proof is well hinted by the two propositions in the *Kātyāyana Śulba* preceding the general theorem of the square of the diagonal of a rectangle.[1] It is evident from Fig. 3 that the square *ABCD* is equal to ten elementary squares, four forming the inner square *OPQR* and the remaining six from the halves of the four rectangles surrounding it, viz. *AFBO*, *BGCP*, *CHDQ*, *DEAR*, each of which consists of three elementary squares. These can again be divided into two groups: one group consisting of nine elementary squares forming the square on the line *OB*

[1] *Kātyāyana Śulba*, ii.8-9.

and another group of a single elementary square on the side OA. Thus it is proved that $AB^2 = OA^2 + OB^2$.

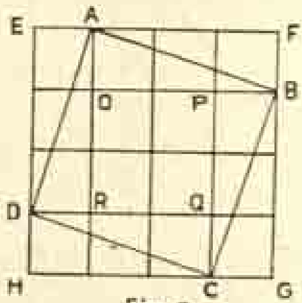


Fig. 3

From such instances of rectangles whose lengths and breadths can be represented by commensurable quantities, and in which the truth of the theorem is proved easily, one can deduce without any difficulty a general geometrical proof of it. He has to draw four rectangles equal to the given one, each having as its diagonal a side of the square on the diagonal of the given rectangle.

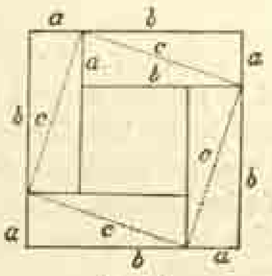


Fig. 4

Then it follows obviously,

$$c^2 = 4\ (\tfrac{1}{2}ba) + (b-a)^2,$$

$$\text{or } c^2 = b^2 + a^2$$

This proof reappears in the works of Bhāskara II (born 1114 A.D.).[1]

Another plausible hypothesis about the general proof will be as follows:

Let $ABCD$ be a given square. Draw the diagonal AC and cut off AE equal to AC. Construct the square $AEFG$ on AE. Join DE and on it construct the square $DHME$. Complete the construction as indicated in Fig. 5.

[1] *Bija-gaṇita* of Bhāskara II.

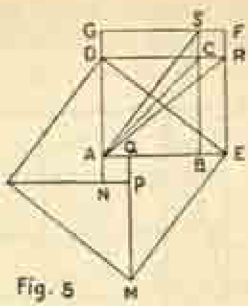


Fig. 5

Now, square $DHME = 4$ (triangle DAE) + square $ANPQ$
$= AERD + ABSG + CRFS$
$= ABCD + AEFG$
Therefore $DE^2 = DA^2 + AE^2$

Q.E.D.

Constructions like the above are necessary in the usual course in the *Śulba*.

In the course of construction of Fire-altars, it was necessary to add together or subtract from one another two or more figures such as squares, rectangles, triangles, etc. In the case of combination of squares, mere application, repeated when necessary, of the theorem of the square of the diagonal was sufficient to get the desired result. But in the case of other figures, they had first to be transformed into squares before the theorem could be applied and the combined square was then used to be retransformed into any desired shape. The method described in the *Śulba* for the transformation of a square into a rectangle which shall have a given side is very scientific.

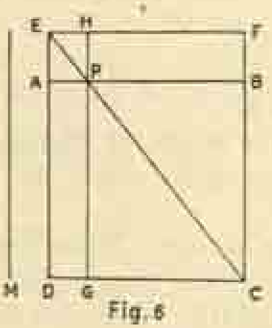


Fig. 6

Let $ABCD$ be a given square and M a given length which is greater than a side of the square.

Produce DA and CB to E and F respectively so as to make $DE = CF = M$. Join EF. Draw EC cutting AB at P. Through P draw HPG parallel to ED or FC. Then $HFCG$ is the rectangle which is equivalent to the square $ABCD$ and whose side DE is equal to the given length M. For

$$\text{Triangle } EFC = \text{Triangle } EDC$$
$$\text{Triangle } EHP = \text{Triangle } EAP$$
$$\text{Triangle } PBC = \text{Triangle } PGC$$

$\therefore$ parallelogram $HFBP$ = parallelogram $ADGP$
Hence parallelogram $HFCG$ = square $ABCD$

Q. E. D.

When the given length M is less than a side of the given square $ABCD$, constructions will be as in Fig. 7.

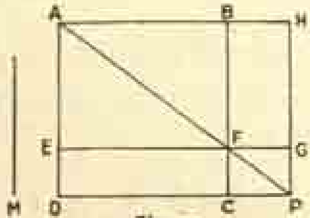


Fig. 7

GEOMETRICAL ALGEBRA

The Vedic geometry contains the seeds of Hindu *geometrical algebra* whose developed form and influence we find as late as the *Bijagaṇita* of Bhāskara II (1150 A.D.). It has a solution of the complete quadratic equation

$$ax^2 + bx = c$$

But its most noteworthy achievements are in the field of indeterminate analysis.[1]

To find a square equal to the sum of a number of other squares of the same size, Kātyāyana (*c.*500 B.C.) indicates a very simple and elegant method:

" As many squares (of equal size) as you wish to combine into one, the transverse line will be (equal to) one less than that: twice a side will

[1] Bibhutibhusan Datta, " The origin of Hindu indeterminate analysis," *Archeion*, Vol. XIII (1931), pp. 401-7; *Sulba*, pp. 133 ff., pp. 178 ff.

be (equal to) one more than that; (thus) form a triangle. Its arrow (that is, altitude) will do that."[1]

That is to say, to combine n equal squares of sides a each, we shall have to form a triangle ABC whose base BC will be equal to $(n-1)a$ and $2\ AB = 2\ AC = (n+1)\ a$.

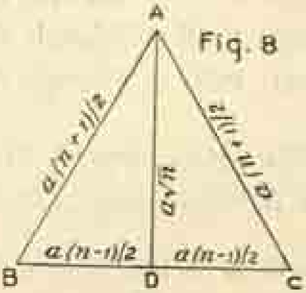


Fig. 8

Then if AD be the altitude of the triangle, $AD^2 = na^2$. Thus

$$(\sqrt{n})^2\ a^2 + \left(\frac{n-1}{2}\right)^2 a^2 = \left(\frac{n+1}{2}\right)^2 a^2.$$

Putting m^2 for n in order to make the sides of the right-angled triangle free from the radical, we get

$$m^2 a^2 + \left(\frac{m^2-1}{2}\right)^2 a^2 = \left(\frac{m^2+1}{2}\right)^2 a^2$$

as the solution of the indeterminate equation of the second degree

$$x^2 + y^2 = z^2.$$

If the sides of the right-angled triangle are to be integral as well as rational, m must be odd. According to Proclus (*c.*450 A.D.) a particular case of this solution, where $a=1$, was known to Pythagoras (*c.*540 B.C.).

Putting $m=5$, $a=3$ in the above formula we get the rational rectangle (15, 36, 39) which has been applied in the *Taittiriya Saṁhitā*[2] (*c.*3000 B.C.).

A more general solution of $x^2+y^2=z^2$ is furnished by the Vedic method for the transformation of a rectangle into a square and that for the enlargement of a square.

$$(2mn)^2 + (m^2 - n^2)^2 = (m^2 + n^2)^2.$$

[1] *Kātyāyana Śulba*, vi.5.

[2] *Taittiriya Saṁhitā*, vi.2.4.5.

It was also known that if (p, q, r) be a rational solution of the equation $x^2+y^2=z^2$, other rational solutions of it will be given by (lp, lq, lr), where l is any rational number. Thus the Vedic Hindus obtained the complete general solutions of the rational right-angled triangles. From them they derived rational right triangles having a given leg. The method is to reduce the sides of any rational right triangle in the ratio of the given leg to the corresponding leg of it. Thus the sides of a rational right triangle having a given leg a will be $(a, aq/p, ar/p)$, where p, q, r are the sides of any rational right triangle. This method of obtaining rational right triangles having a given leg has been followed in later times in India by Mahāvīra (850 A.D.) and in Europe by Leonardo Fibonacci of Pisa (1202) and Vieta (*c.* 1580).

There are in the *Śulba* solutions also of simultaneous indeterminate equations. To indicate how such equations present themselves we take, for example, the case of the *Śyena-chit* (Falcon-shaped Fire-altar). Its total area (at the first construction) is $7\frac{1}{2}a^2$, where a=one *purusha*. It is laid down that this Fire-altar must be constructed in five layers, each layer consisting of 200 bricks, and that the rifts of bricks in successive layers must not be identical. There is no special injunction about the varieties of bricks to be employed or about their relative size. Now there are different methods of construction of this Fire-altar. In one method described by Baudhāyana four kinds of square bricks are used, while in a second method he employs rectangular bricks also. If we take in general the areas of the four varieties of bricks to be a^2/m, a^2/n, a^2/p, a^2/q and if x, y, z, u denote respectively the number of bricks of each variety in a layer, we shall have

$$\frac{x}{m}+\frac{y}{n}+\frac{z}{p}+\frac{u}{q}=7\frac{1}{2},$$

$$x+y+z+u=200.$$

Baudhāyana states four solutions of these equations:[1]

	(i)	$m=16$,	$n=25$,	$p=36$,	$q=100$;
	(i.1)	$x=24$,	$y=120$,	$z=36$,	$u=20$,
or	(i.2)	$x=12$,	$y=125$,	$z=63$,	$u=0$;
			and		
	(ii)	$m=25$,	$n=50$,	$p=50/3$,	$q=100$;
	(ii.1)	$x=160$,	$y=30$,	$z=8$,	$u=2$,
or	(ii.2)	$x=165$,	$y=25$,	$z=6$,	$u=4$.

[1] *Baudhāyana Śulba*, iii.24 ff., 41 ff.

For the construction of the same altar Āpastamba uses as many as five different varieties of square bricks.[1] So in his case the equations are

$$\frac{x}{m}+\frac{y}{n}+\frac{z}{p}+\frac{u}{q}+\frac{v}{r}=7\frac{1}{2},$$

$$x+y+z+u+v=200.$$

As many as five solutions of these equations are found:

$m=16$,	$n=25$,	$p=64$,	$q=100$,	$r=144$;
$x=67, 74, 77$;	$y=58, 45, 42$;	$z=48, 52, 40$;	$u=18, 20, 32$;	$v=9, 9, 9$;
$m=16$,	$n=25$,	$p=36$,	$q=64$,	$r=100$;
$x=12, 70, 20$;	$y=157, 45, 159$;	$z=9, 9, 9$;	$u=0, 56, 8$;	$v=22, 20, 14$.

The Vedic Hindus knew elementary treatment of surds. They were aware of the irrationality of $\sqrt{2}$ and attained a very remarkable degree of accuracy in calculating its approximate value.[2]

$$\sqrt{2}=1+\frac{1}{3}+\frac{1}{3.4}-\frac{1}{3.4.34}.$$

In terms of decimal fractions this works out $\sqrt{2}=1.4142156...$ According to modern calculation $\sqrt{2}=1.414213...$ so that the Hindu approximation is correct up to the fifth place of decimals, the sixth being too great.

There have been various speculations as to how the value of $\sqrt{2}$ was determined in that early time to such a high degree of approximation. Nīlakaṇṭha (1500 A.D.) opines that Baudhāyana assumed each side of a square to consist of 12 units.[3] Then the square of its diagonal will be equal to 2.12^2. Now

$$2.12^2=288=289-1=17^2-1$$

$$\therefore\ 12.\sqrt{2}=\sqrt{17^2-1},$$

$$=17-\frac{1}{2.17},\quad \text{approximately.}$$

Hence $$\sqrt{2}=1+\frac{1}{3}+\frac{1}{3.4}-\frac{1}{3.4.34},\quad \text{approximately.}$$

[1] *Āpastamba Sulba*, xi. 1 ff. See also Datta, *Sulba*, pp. 184-5.

[2] *Baudhāyana Sulba*, i.61-2; *Āpastamba Sulba*, i.6; *Kātyāyana Śulba* ii.13

[3] See his commentary on the *Āryabhaṭīya* of Āryabhaṭa.

The same hypothesis has been suggested in recent times by Thibaut.[1] We think that the result was arrived at geometrically in the following way.[2]

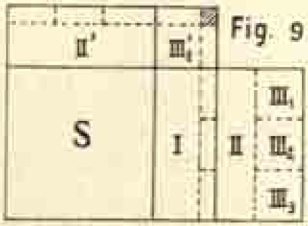


Fig. 9

Take two squares whose sides are of unit length. Divide the second square into three equal strips I, II and III. Subdivide the last strip into three small squares III_1, III_2 and III_3 of sides $1/3$ unit each. Then on placing II and III_1 about the first square S in the positions II′ and III'_1, a new square will be formed. Now divide each of the portions III_2 and III_3 into four equal strips. Placing four and four of them about the square just formed, on its east and south sides, say, and introducing a small square (marked shaded in the figure) at the south-east corner, a larger square will be formed, each side of which will be obviously equal to

$$1+\frac{1}{3}+\frac{1}{3.4} \ .$$

Now this square is clearly larger than the two original squares by an amount $\left(\frac{1}{3.4}\right)^2$, the area of the small (shaded) square introduced at the corner. So to get equivalence, cut off from the sides of the former square two thin strips. If x be the breadth of each thin strip, we must have

$$2x\left(1+\frac{1}{3}+\frac{1}{3.4}\right)-x^2=\left(\frac{1}{3.4}\right)^2$$

whence, neglecting x^2 as being too small, we get

$$x=\frac{1}{3.4.34}, \text{ nearly.}$$

Thus we have finally

$$\sqrt{2}=1+\frac{1}{3}+\frac{1}{3.4}-\frac{1}{3.4.34} \text{ nearly.}$$

[1] G. Thibaut, *Śulbasūtras*, pp. 13 ff.; reprinted from an article in the *Journal of the Asiatic Society of Bengal*, Vol. XXIV (1875), pp. 227-275.

[2] Datta, *Śulba*, pp. 192 ff.

Proceeding in the same way we easily get an approximate value of $\sqrt{3}$, namely, $\sqrt{3} = 1 + \frac{2}{3} + \frac{1}{3.5} - \frac{1}{3.5.52}$, nearly.

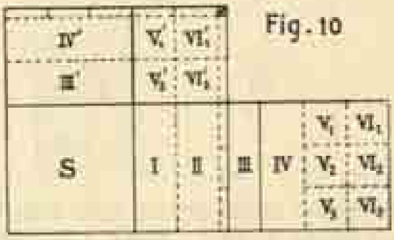


Fig. 10

This approximate value can be obtained by the method of Nīlakaṇṭha thus:

$$\sqrt{3} = \frac{1}{15}\sqrt{3.\,15^2}.$$
$$= \frac{1}{15}\sqrt{26^2 - 1},$$
$$= \frac{1}{15}\left(26 - \frac{1}{2.\,26}\right), \quad \text{nearly.}$$
$$= 1 + \frac{2}{3} + \frac{1}{3.5} - \frac{1}{3.5.52}, \quad \text{nearly.}$$

ARITHMETIC

As has been noted before, no work on Vedic arithmetic has survived the ravages of time. Information that can be gathered from secondary sources is very meagre. So it is not possible for us now to define the scope of treatment and topics for discussion in Vedic arithmetic.

One problem appears to have attracted the greatest attention and interest of the Vedic Hindus. It is to divide one thousand into three equal parts. Only the gods Indra and Vishṇu succeeded in solving it. And for that they have been extolled highly in the Vedic literature. Thus the *Taittirīya Saṁhitā* (*c.*3000 B.C.) says:

"Ye twain have conquered; ye are not conquered;
Neither of the two of them hath been defeated;
Indra and Vishṇu, when ye contended,
Ye did divide the thousand into three."[1]

[1] *Taittirīya Saṁhitā*, vi.1.6. (Keith's translation); see also iii.2.11.2

The earliest reference to this great achievement of Indra and Vishṇu is found in the *Ṛig-Veda*.[1] It is mentioned also in other works.[2] It is very difficult to guess how the problem was actually solved. For 1000 is not exactly divisible by 3. So attempt has been made to explain away the whole thing as a metaphorical statement. We find that, as early as in the *Aitareya Brāhmaṇa*, a story was fabricated about the contest of Indra and Vishṇu with the *asuras* and their ultimate victory over the latter. "They say, 'What is thousand?'" it writes, "These worlds, these Vedas, moreover speech, he should reply."[3] But the statement of the *Śatapatha Brāhmaṇa* seems clearly to belie all such speculations. It says: "When Indra and Vishṇu divided a thousand into three parts, one remained in excess, and that they caused to be reproduced into three parts. Hence even now if any one attempts to divide a thousand by three, one remains over."[4] Thus it was indeed a mathematical feat.

The Vedic Hindus developed the terminology of numeration to a high degree of perfection. The highest terminology that the ancient Greeks knew was 'myriad' which denotes 10^4 and which came into use only about the fourth century B.C. The Romans had to remain contented with a 'mille' (10^3). But millenniums before them the Hindus proceeded to *parārdha* (10^{14}) and could express easily, without ambiguity and cumbrousness, any number which in our present notation will have to be expressed by fourteen digits. The whole system is highly scientific and is very remarkable for its precision.

From the time of the Veda (*c.* 3000 B.C.), the Hindus adopted the decimal scale of numeration. They coined separate names for the notational places corresponding to 1, 10, 10^2, 10^3, 10^4, 10^5,......and any number, however big, used to be expressed in terms of them (*vide infra*). But in actual practice, in expressing a number greater than 10^3 (*sahasra*), it was more usual to follow a centesimal scale. Thus 50.10^3 is more common a form than 5.10^4. For instance, we find *shashṭiṁ sahasrāṇi*[5] (=60,000), *pañchāśat sahasraṁ*[6] (=50,000), *dvā-saptatiḥ sahasrāṇi*[7] (=72,000), etc. Even such forms as $x.10^2$ are not wanting; as

[1] *Ṛig-Veda*, vi.69.8.

[2] *Atharva-Veda*, iii.44.1; *Maitrāyaṇiya Saṁhitā*, ii.4.4; *Śatapatha Brāhmaṇa*, iii.3.1.13.

[3] *Aitareya Brāhmaṇa*, vi.15.

[4] *Śatapatha Brāhmaṇa*, iii.3.1.13.

[5] *Ṛig-Veda*, i.53.9; vii.46.22; *Śatapatha Brāhmaṇa*, x.2.1.11; xiii.4.1.6, etc.

[6] *Ṛig-Veda*, iv.16.13.

[7] *Bṛihadāraṇyaka Upanishad*, ii.1.19.

for example *sashtiḥ śatā*[1], and so on. Though the term for the sixth denomination is *niyuta* in the Vedic literature (except in the *Kāṭhaka Saṁhitā*), it was oftentimes called the *śata-sahasra* (that is, 'hundred thousand'). All these bespeak that in pre-Vedic times hundred formed the base of numeration in India. It has still remained so in the *Prākṛita* literatures, though the Sanskrit-speaking Aryans discarded it in the Vedic Age in favour of the more coevenient and natural base of ten. In some of the modern vernaculars of India, e.g. Hindi, it may be noted by the way, there are no distinctive names for the places 10^4, 10^6, etc. In the *Taittirīya Upanishad* (ii.8) the centesimal scale has been adopted in describing the different orders of bliss. The bliss of the Brahman has been estimated as 100^{10} times the measure of one human bliss.

In concrete cases of measurements, the Hindus oftentimes followed other scales. For instance, we have in the *Śatapatha Brāhmaṇa* (xii.3.2.1 *et seq.*) the minute subdivision of time on the scale of 15. The smallest unit *prāṇa* is given as $^1/15^5$ of a day.[2] In the *Vedāṅga Jyotisha* (verse 31), a certain number is indicated as *eka-dvi-saptika*. If it really means 'two-sevenths and one,' as it seems to do, then it will have to be admitted that there was once a septasimal scale.[3]

The whole vocabulary of the number-names of the Vedic Hindus consisted mainly of 30 fundamental terms which can be divided into three groups, viz.

Group A:—*eka, dvi, tri, chatur, pañcha, shaṭ, sapta, ashṭa, nava;*

Group B:—*daśa, viṁśati, triṁśat, chatvāriṁśat, pañchāśat, shashṭi, saptati, aśiti, navati;*

Group C:—*śata, sahasra, ayuta, niyuta, prayuta, koṭi, arbuda, nyarbuda, samudra, madhya, anta, parārdha.*

In group A, each term stands for a number which is greater by unity than the number denoted by the term preceding it. In group B each term stands for a number greater by 10 than the preceding term and in group C each term is numerically 10 times as great as the preceding term. The name of any other number is formed by a combination of the above terms, in a well-defined and well-regulated manner.

[1] *Ṛig-Veda*, vii.18.14.

[2] The *Śāṅkhāyana Śrauta-sūtra* (xiv.75 *et seq.*) has a decimal subdivision of the day. Compare *Śāṅkhāyana Āraṇyaka*, vii.20.

[3] The *centesimal* and *septasimal* scales are found in the Buddhist work *Lalitavistara* (Chap. x).

It should be pointed out that all authorities agree about the names and their order in groups A and B. But in group C, there is agreement also up to the term *ayuta* (=10,000). After that there are variations, sometimes by the interchange of terms and at other times by the introduction of one or two new terms.[1] But these are not very material. It is noteworthy that all the number-names in group B except the first one *daśa* are formed, as has been pointed out by the celebrated Grammarian Pāṇini (*c.*700 B.C.),[2] from *daśa* on a multiplicative principle. Thus *viṁśati* (=20)=*dvau daśatau* (2×10); *triṁśat* (=30)=*trayo daśatāḥ* (3×10); and so on.

The compound name for a number below hundred is formed by two words, one from each of the groups A and B. The term from the group A generally precedes the term from the group B. Thus we have *ekā-daśa* (eleven), *sapta-viṁśati* (twenty-seven), *ashṭā-triṁśat* (thirty-eight), etc. In a compound number-name of this class, the principle involved is that of addition.[3] But in certain special cases, viz. the compound names containing the term *nava* (9), the principle of subtraction is also in evidence. Thus 19 is called *nava-daśa* (literally, ' nine plus ten ') or *ekānna-viṁśati* (literally, " twenty but for one "). Similarly, we get such names as *nava-viṁśati* (9+20) or *ekānna-triṁśat* (30-1); *nava-navati* (9+90) or *ekānna-śata* (100-1). The principle of subtraction is found from the earliest Vedic Age. In an instance from the *Taittirīya Saṁhitā* (vii.2.11), the principle of addition and the principle of subtraction occur alternately in an interesting way: *ekānna-viṁśati*, *nava-viṁśati*, *ekānna-chatvāriṁśat*, *nava-chatvāriṁśat* and so on. In later times, however, the terms *nava-daśa*, *nava-viṁśati*, etc., became obsolete and the terms involving the principle of subtraction were retained as the usual fashion. In these again the prefix *ekānna* changed to *ekona* (' one less '), so that we get only such forms as *ekona-viṁśati*, *ekona-triṁśat*, etc. Sometimes even the numerical prefix *eka* is deleted and we have *ūna-viṁśati* etc.

The facts just mentioned will belie, so far at least as the terminology is concerned, the remark of Cajori that the principle of subtraction was not used by any other nation before the old Etruscans of Italy.[4] It was, in fact, applied by the ancient Hindus not less than two millenniums before them.

[1] See Macdonell & Keith, *Vedic Index*, on ' Daśan '.

[2] *Pāṇini*, v.1.59.

[3] See *Pāṇini*, v.2.44; vi.3.47.

[4] F. Cajori, *History of Mathematics*, revised edition, 1922, New York, p. 63.

In the formation of names of numbers above 100, which requires the use of the terms from the group C, two principles are mainly in evidence, the principle of multiplication and the principle of addition. We have already remarked that the multiplicative principle is present, more or less covertly, in the formation of number-names in the group B, except the first one. But henceforth it will be seen prominently in evidence. When a small number is placed *before* a term of higher denomination, the latter is to be multiplied by the former, but when placed *after*, it is to be added.[1] Thus it became necessary to stick to a definite order of arranging the terms of different denominations which occur in the name compound of a big number. The usual practice from the earliest time has been to put the term of higher denomination first, except in the case of the two lowest denominations where the reverse is usually followed. Thus we find in the *Ṛig-Veda*[2] such illustrations as *sapta śatāni viṁśatiḥ* = 720, *sahasrāṇi śatā daśa* = 1110, *shashṭiṁ-sahasrā navatiṁ nava* = 60,099.

As regards the numeral symbolism of the Vedic Hindus we are almost completely in darkness still. Because while knowledge about numeral expressions can be sufficiently gathered from literary remains, for that about the forms and symbols of numbers palæographic records are absolutely essential. And unfortunately the work of excavation of ancient Hindu sites is in its primary stage now. So nothing definite can be said at present about the numeral signs and system or systems of the Vedic Hindus.

In the *Ṛig-Veda* (x. 62.7) some cows have been distinguished from others by the qualifying epithet *ashṭa-karṇi*. It means obviously "having (the sign for the number) 8 marked on the ear."[3] In the *Yajur-Veda* is mentioned a certain gold weight called *ashṭā-pruddhiraṇ-*

[1] Exceptions to this general rule and other peculiarities in the formation of number-names have been noted in the author's articles "*Aṅkānāṁ vāmato gatiḥ*" in the *Sāhitya Parishad Patrikā*, 1337 B.S., pp. 70-80.

[2] i.164.11; ii.1.8; i.53.9 respectively.

[3] This obvious interpretation of the term *ashṭa-karṇi* has been disputed by some modern Oriental scholars without any sufficient ground. But it is supported by other similar epithets, e.g. *karkari-karṇyaḥ* ("having the mark of a lute on the ear"), *dātra-karṇyaḥ* ("having the mark of a sickle on the ear"), *sthūṇā-karṇyaḥ* ("having the mark of a stake on the ear"), etc., which are found in the *Maitrāyaṇīya Saṁhitā* (iv.2.9). See *Vedic Index*, I, p. 46; Zimmer, *Altindische Leben*, pp. 234, 235, 348.

yaṁ[1] or *ashṭā-mṛidaṁ hiraṇyam.*[2] Both these expressions have the identical significance, " a piece of gold having (the sign for the number) 8 impressed on it."[3] Thus we have clear evidence to show that the Vedic Hindus had numeral signs.

The seals and inscriptions of Mohenjo-daro show, as far as they have been deciphered up till now, that in the fourth millennium before the Christian era, the numbers were represented in the Indus Valley by means of vertical strokes arranged side by side or one group upon another. There were very probably other signs for bigger numbers. But we are not now sure of it. However, those rudimentary and cumbrous devices of rod-numerals were quite useless for the representation of large numbers mentioned in the Veda. In calculating with such large numbers, as large as up to the denomination of 10^{14}, the Vedic Hindus certainly found the need of some shorter and rapid method of representing numbers. Such and other considerations give sufficient grounds for concluding that the Vedic Hindus had developed a much better system of numerical symbols. In an " ancient story " narrated in the *Mahābhārata*[4] it is stated that " the signs of calculation (that is, numeral signs) are always only nine in number."[5] Persons occurring in it, namely, Uddālaka, Śvetaketu, Ashṭāvakra and Janaka, were well known in the Upanishads. If these can be relied upon for the truly ancient character of that story, it becomes clear that the decimal place-value system of numeral notation was known to the Hindus of the Brāhmaṇa period.

From an instance in the Grammar of Pāṇini (*c.* 700 B.C.) we come to know that the letters of the alphabet then used to be applied to denote numbers. Another favourite device of the Vedic Hindus to record numbers was to employ names of things permanently connected with numbers by tradition and other means, for those numbers, and some-

[1] *Taittirīya Saṁhitā*, iii.4.1.4; *Kāṭhaka Saṁhitā*, xiii. 10.

[2] *Kāṭhaka Saṁhitā*, xiii. 10.

[3] The lengthening of the terminal vowel *a* of *ashṭa* into *ā* as occurs in the compounds *ashṭā-pruth* and *ashṭā-mṛidaṁ* is Vedic grammar and is found in many cases, e.g. *ashṭā-kapālam*, *ashṭā-padim*, etc. The root *pruth* means " to employ force " and *mṛid* " to press upon." Hence the radical significance of the compounds *ashṭā-pruth* and *ashṭā-mṛidam* is " having (the sign for the number) 8 impressed upon."

[4] *Mahābhārata*, (Calcutta Edition), *Vanaparva*, chapters 132-4.

[5] " *Navaiva yogo gaṇaneti śaśvat* "—*Ibid.*, chap. 134, verse 16.

times *vice versa*. Applications of it are found in the earliest Saṁhitās. These letter and word systems of recording numbers became very popular in later times, especially amongst astronomers and mathematicians. Reasons for that as also for their origin will be found in the love of the Hindus for putting everything into verse. For the sake of the rhyme it was necessary to have several alternative ways of expressing the numbers which were involved in the verses.

It appears that the Vedic Hindus used to look upon some numbers as particularly holy.[1] One such number is three. In the *Ṛig-Veda*, the gods are grouped in three (i.105.5; vii.69.58); the mystical "three dawns" are mentioned (viii.41.3; x.67.4). Cases of magic where "three" is employed in a mysterious occult manner occur in the *Ṛig-Veda* (viii.91.5-7; x.87.10 ff.) and *Atharva-Veda* (iv.3.1; 9.8). Even the number 180 is mentioned in the *Ṛig-Veda* as "three sixties" (viii.96.8) and 210 as "three seventies" (viii.19.37). The holiest number seems to have been seven. Thus in the *Ṛig-Veda* we get "seven seas" (viii.40.5); "seven rays of the sun" (i.105.9; viii. 72.61); "seven sages" (iv.42.8; ix.92.2, etc.); and the number 49 is stated as "seven sevens." Instances of combinations of these two holy numbers also occur. Thus 21 is stated as "three sevens" in the *Ṛig-Veda* (i.133.6; 192.12) and *Atharva-Veda* (i.1.1) and 1470 as "three seven seventies" in the *Ṛig-Veda* (viii.46.26).

Numbers were divided by the Vedic Hindus into even (*yugma*, literally, "pair") and odd (*ayugma*, lit., "not pair"). They do not seem to have proceeded into further subdivisions of numbers. In two hymns of the *Atharva-Veda* (xix.22.3), there is, I presume, a reference to the zero as well as to the recognition of the negative number. The zero has been called *kshudra* ("*trifling*"). The negative number is indicated there by the epithet *anṛicha*, while the positive number by *ṛicha*. The Sanskrit word *ṛicha* means "a sacred verse"; that which is not *ṛicha* is *anṛicha*. Those designations were replaced in later times by *ṛiṇa* ("debt") and *dhana* ("asset").

The Vedic Hindus became interested in numbers forming series or progressions. In the *Taittirīya Saṁhitā* (vii.2.12-7) numbers of verses

[1] E. W. Hopkins, "Numerical formulæ in the Veda and their bearing on Vedic criticism." *Journal of the Amer. Orient. Soc.*, Vol. XVI, pp. 275-281.

are found to have been mentioned according to the following arithmetical series:

$$\begin{array}{l} 1,\ 3,\ 5,\ .\ .\ .\ .\ 19,\ 29,\ 39,\ .\ .\ .\ .\ 99 \\ 2,\ 4,\ 6,\ .\ .\ .\ .\ 20 \\ 4,\ 8,\ 12,\ .\ .\ .\ .\ 20 \\ 5,\ 10,\ 15,\ .\ .\ .\ .\ 100 \\ 10,\ 20,\ 30,\ .\ .\ .\ .\ 100 \end{array}$$

The arithmetical series are classified into odd (*ayugma*) and even (*yugma*) series. The *Vājasaneyi Saṁhitā* (xviii.24.25) has given the following two instances of them respectively:

$$\begin{array}{l} 1,\ 3,\ 5,\ .\ .\ .\ .\ 31 \\ 4,\ 8,\ 12,\ .\ .\ .\ .\ 48 \end{array}$$

The first series occurs also in the *Taittirīya Saṁhitā* (iv.3.10). In the *Pañchaviṁśa Brāhmaṇa* (xviii.3) is described a list of sacrificial gifts forming a geometrical series of some interest,

$$24,\ 48,\ 96,\ 192,\ .\ .\ .\ .\ 49152,\ 98304,\ 196608,\ 393216.$$

This series reappears in the *Śrauta-sūtras*.

Some method of the summation of series was also known. In the *Śatapatha Brāhmaṇa* (x.5.4.7) thrice the sum of an Arithmetical Progression whose first term is 24, the common difference 4 and the number of terms 7 is stated correctly as 756. That is to say,

$$3\times\ (24+28+32+\ .\ .\ .\ \text{to 7 terms})=3\times\tfrac{7}{2}\{2\times24+(7-1)\times4\},$$
$$=756.$$

In the *Bṛihaddevatā* (iii.13) we have the summation

$$2+3+4+\ .\ .\ .\ +1000=500499.$$

From the method indicated by Baudhāyana for the enlargement of a square by successive additions of gnomons, it is evident that he knew the result

$$1+3+5+\ .\ .\ .\ +(2n+1)=(n+1)^2.$$

The Vedic Hindus knew how to perform fundamental arithmetical operations with elementary fractions. For example, we take the following results from the *Śulba*:[1]

$$7\tfrac{1}{2}\div\tfrac{1}{25}=187\tfrac{1}{2},$$
$$(2\tfrac{2}{3})^2+(\tfrac{1}{2}+\tfrac{1}{12})\ (1-\tfrac{1}{3})=7\tfrac{1}{2},$$
$$\sqrt{7\tfrac{1}{9}}=2\tfrac{2}{3}.$$

They dealt also with a fraction of a fraction, e.g $7\frac{1}{2}\div\frac{1}{15}\text{ of }\frac{1}{2}=225.$

[1] For further information on the subject, see Datta, *Śulba*, pp. 212 ff.

MATHEMATICS IN MODERN INDIA

NATURE OF MODERN MATHEMATICS

The feature of the modern age which strikes the eye at first sight is its wide and varied use of machinery and the harnessing of natural forces to the service of human needs. That which has made this possible is the mathematical outlook which from the crude beginnings of early human history has now developed into a self-confident full-dress view of the nature of external Reality, founded on the concept of Natural Law. Philosophical investigations into the nature and method of mathematical science have revealed that Mathematics is essentially a science of relations, and is founded in the last resort on the notion of serial order. The two working concepts of Mathematics—Number and Function—are, for instance, of purely relational nature; even the 'Numbers,' which are the entities with which Mathematics works, are empty of all concrete content; their being is exhausted in the order-relations which define them. In short, Mathematics thinks away the intrinsic essence of the entities with which it deals, there remaining no longer their being-for-itself, but only their relational being or being-for-others. This fact is expressed strikingly in Russell's paradoxical definition, 'Mathematics is the science in which we do not know what we are talking about, nor whether what we say is true.'

The typical being-for-itself is revealed in the notion of the self which arises in self-consciousness. The investigation of the nature and possibilities of the self through suitable systems of *sādhanā* leads to higher levels of spiritual consciousness and to the experience of God as the upper limit of Being—transcendent and super-relational, or immanent and containing all relations within itself. It follows that the knowledge-effort in man can have two orientations—either towards intrinsic or individual being culminating in its upper limit God, or towards merely relational being or being at its inferior limit in Mathematics. God and Mathematics are thus the extreme poles between which all cognitive experience oscillates; the one typifies the supremely individual being and freedom, the other extrinsic being and mechanism.

MEASUREMENT

Mathematics is the general science of uni-serial and multi-serial order and is erected upon the fundamental concepts of Number and

Function. It is able to apply itself to the explanation of the order ruling in the sense-world by means of the idea of *measurement* which serves as the connecting link between the ideal world of mathematical concepts and the world of presentation. Associated with the idea of measurement there arises the notion of the mathematical space-time continuum which is the foundation of the physical sciences and the framework into which all physical phenomena are placed.

The significance and universality of the idea of measurement were not apprehended all at once, but only gradually with the growth of mathematical concepts; among the pioneers through whose work it was developed, should be mentioned Descartes, Kepler, Galileo. It is true that ancient thinkers had indeed performed measurements for special purposes; but neither the Hindu, Egyptian or Chinese astronomers, nor the versatile Aristotle recognized in measurement the master-key to the scientific description of Nature. By means of measurement the physical phenomena are arranged in types of order which Mathematics handles by its concepts of Number and Function, and the concept of Nature as a relation-structure expressed by mathematical laws comes to the forefront. It is the recognition of this which is the birth of modern Mathematics and modern science and the mark of the time-spirit of the present age. It is in conformity with this fact that the physical sciences which are most readily susceptible to the process of measurement have attained the greatest progress in this age and have set the standard of scientific perfection. The social sciences whose ultimate units are human beings possessing individuality have been partially brought under the scope of the mathematical method by means of the science of averages, while the biological and mental sciences whose fundamental concepts are qualitative are conscious of their lack of quantitative exactitude and have made the least progress.

MATHEMATICS AND INDIAN CULTURE

The Vedas and the Upanishads constitute the seed of Indian thought and culture. The Purāṇas and Itihāsas, the philosophical schools, the ritualistic codes, and even the literature and the art of India may be looked upon as an extension and elaboration of the situation created by the spiritual experiences and affirmations of the Śrutis. If this is the imposing contribution of Indian thought to the knowledge of Absolute Being which is at one pole of cognitive experience, the present age may boast with equal justice of having achieved through Mathematics the

formulation of the study of Relational Being (or if we prefer it, Non-Being) which is situated at the other pole. Neither by itself is the complete knowledge, it requires both to fill up the gamut of experience. It is no doubt the orientation of classical Indian thought towards the transcendence of the relative and the attainment of Intrinsic Being and Concrete Reality, which has shut the door to its entry into the formal and abstract thought which initiates the worlds of intellectual and practical experience characteristic of the present age. It was not, be it noted, a defect in methodology, in constructive reasoning or logical analysis; we find indeed superb examples of these in the philosophical achievements of Indian thought. But in such reasonings the final valuation is always directed to Intrinsic Being. The analysis is focussed on qualities expressive of *Sat*, and there is never any move towards the emptying of concrete content and the surrender towards abstract relational thought and pure formalism. This tendency of Indian thought will be strikingly revealed if we compare, for instance, the formal perfection of Greek Logic with the psychologically more penetrating treatment of reasoning in Indian systems, and note in particular the inferior rôle assigned to hypothetical propositions in the latter. It would appear that a certain power of formal thought which was congenial to the Greek mind was denied to the Indian thinkers on account of their too strong sense of the concrete content of experience. It is the same difference which would explain why Indian geometers, though in possession of a considerable body of geometrical knowledge, came nowhere near the abstract logical method and the finished formal perfection of Euclid. For the same reason, even though Pythagoras's theorem was probably known to the Hindus as early as the Vedic age, there was no Indian attempt to recognize incommensurable magnitudes and elucidate their nature even on the geometrical lines of Euclid. It must again have been the same inability to achieve abstract formalism which stood in the way of Bhāskara's conceiving the idea of limit and anticipating the foundation of Modern Analysis by several centuries, even though his brilliant intuition had landed him straight on the root-idea of the Differential Calculus.

The formalism of Mathematics and the insight which it furnishes into the relation-structure of natural phenomena is an absolutely new emergence in human evolution; it represents a pole of consciousness opposed to, but equally absolute with, the God-consciousness which has been the objective of Indian thought for millenniums. Its absorption and

assimilation are necessary for completing the full circle of experience —the ideal of the *Pūrṇa* (whole) which has held such glamour for Indian aspiration in the past.

THE STUDY OF MATHEMATICS IN MODERN INDIA

The first universities in India were incorporated early in the last century. Though behind them there was the genuine desire to impart Western culture, the standard of education was low; the idea of research being a function of the university was unknown, and there was no attempt to keep pace with the progress of thought in the West. This has changed only gradually, so much so that the history of mathematical work in India is not more than thirty years old. Though this work has not covered all branches of modern Mathematics, the record in this period is quite hopeful, considering the unfavourable circumstances attendant on university education in this country, viz. the foreign medium of instruction, and the lack of rapport with indigenous culture. In particular, there has appeared one Indian, Ramanujan, who is among the foremost mathematicians of the world, besides several other Indian mathematicians of a high order. The mathematical work during these years has been mostly initiated and inspired by Indian students who had learnt modern Mathematics abroad and returned after a course of research in foreign universities. A fair amount of work has been published by them in British and foreign mathematical journals also.

The initiation of mathematical study and research in India was the founding of the Indian Mathematical Society in 1907 by Mr. V. Ramaswami Aiyar and a group of enthusiasts including Messrs. M. T. Naraniengar, Balak Rama, R. P. Paranjpye, K. T. Sanjana and others. This served as a stimulus for the initiation of the Calcutta Mathematical Society in 1909, under the influence of Sir Ashutosh Mookerjee who, himself a mathematician of no mean order, was mainly responsible for converting the University of Calcutta into a centre of advanced study and research. The course of mathematical study in India has been mainly recorded in the publications of these two societies and of the Benares Mathematical Society which was founded in 1919 by Dr. Ganesh Prasad. Dr. Ganesh Prasad is the president of both the northern societies and is by far the most prominent mathematician of North India and has been responsible, directly and through his numerous pupils and co-workers, for a large part of the mathematical work of North India.

Speaking roughly, we may say that Geometry figures considerably in the work recorded by the Indian Mathematical Society, but the applications of Mathematics to Physics are favoured in the work of North India, while the other branches of Mathematics are about equally distributed. We briefly sketch here the prominent mathematical contributors and their main lines of work, beginning with Ramanujan.

The first contribution of Ramanujan appears in the *Journal of the Indian Mathematical Society* in 1911. His romantic career, the story of the discovery of his genius and his subsequent work at Cambridge in the Theory of Numbers, Partitions, Elliptic and Modular Functions, is too well known to be dwelt on in detail here. Gifted with a profound natural genius, he has opened up new lines of research and initiated new and far-reaching methods of attack in what is unquestionably the most difficult branch of modern Mathematics and one which has been a favourite subject with the mathematical masters of the past. His work has raised questions and problems which are being studied and written upon both in the West and in India. Its possibilities, however, are far from being exhausted; like all great work it will be a source of inspiration for future generations. Ramanujan died too soon after his return to India to leave behind him a school. His work, however, is being carried on by two young and brilliant mathematicians, Dr. S. Chowla (Andhra University) and Dr. S. S. Pillai (Annamalai University), who are making important contributions to various topics in the Theory of Numbers.

GEOMETRY

Many of the original members of the Indian Mathematical Society were interested in Geometry, and in particular in the Geometry of the remarkable elements, transformations, etc., connected with a triangle. We accordingly find in the Journal of the Society conspicuous contributions to Elementary Geometry in general and the Geometry of the Triangle in particular from Messrs. V. Ramaswami Aiyar, M. T. Naraniengar, M. Bhimasena Rao, A. A. Krishnaswami Aiyangar, N. Dorairajan and several others. The modern viewpoint in Algebraic-Geometry with its stress on the idea of transformation and invariant is represented by C. V. H. Rao, the present writer, A. Narasinga Rao and their pupils and B. S. Madhava Rao. In particular the work of the present writer on the Invariant Geometry of the Rational (Norm-Curve)

has been brilliantly extended by B. Ramamoorthy (Annamalai University).

Sir Ashutosh Mookerjee is the author of numerous papers on Differential Geometry, his name being now associated in text-books with his geometrical interpretation of Monge's Differential Equation of Conics. Mr. Syamadas Mukhopadhyaya and his pupils have made contributions to the Differential Geometry of Curves in plano and in hyperspace and to Elementary Non-Euclidean Geometry. The Differential Geometry of Curves and Surfaces has also been contributed to by some of Ganesh Prasad's pupils (Bholanath Pal, Harindranath Datta, etc.).

Among the most recent workers in the field must be mentioned D. D. Kosambi who has advanced a comprehensive theory of Parallelism in General Manifolds, and Rambehari who has contributed to the Differential Geometry of Ruled Surfaces.

ANALYSIS

The most important aspect of Modern Analysis is its logical foundation of the Number-Concept and its rigorous handling of limiting processes. This outlook is rapidly imbibed in Indian universities, being represented by able teachers, trained as a rule in Western universities. These, either directly or through the pupils working under their inspiration, have been responsible for considerable contributions of a high level to Analysis.

Ganesh Prasad's work covers a wide field and includes the Theory of Functions of a Real Variable, Elliptic Functions, Fourier's Series and Harmonic Analysis, and the Theory of the Potential. Numerous pupils and co-workers have followed up his work in these directions. Among those who have contributed to the study of Continuity and Derivability of Functions must be mentioned Avadesh Narayan Singh and Lakshminarayan. Among those who have studied Harmonic Analysis, special forms of Harmonic Functions, Elliptic and other Special Functions, may be mentioned S. C. Dhar, Bholanath Pal, Gorakh Prasad, Ram Shankar Varma, Abanibhushan Datta, Subodhchandra Mitra, Shabde and several others.

K. B. Madhava has studied Convergence and Summability of Infinite Integrals and Series. Contributions to the Convergence and Summability and other properties of Taylor's Series and other classes of Infinite Series have been made by K. Ananda Rau and his pupils, T. Vijayaraghavachar, V. Ramaswami, V. Ganapati, Thiruvenkatacharya and

also by L. Srivastava. G. S. Mahajani is the author of a very general form for the Remainder in Taylor's Series. Among the more recent workers in Analysis may be mentioned Siddiqui and Venkatachalla Aiyangar.

Gorakh Prasad has contributed to the Theory of Solution of Integral Equations; Harindranath Datta has written on the General Theory of Differential Equations, while C. N. Srinivasa Aiyangar has published several investigations on the Singular Solutions of Differential Equations.

ALGEBRA AND ARITHMETIC

Ganesh Prasad and Nripendranath Ghose have contributed to the Theory of Solution of Equations of higher, in particular the fifth degree. Contributions to the subject of Algebra in general and Matrix Algebra in particular, have been made by the present writer, S. Krishnamoorthy Rao, Nripendranath Ghosh, and A. Narasinga Rao. Special types of Determinants have been studied by C. Krishnamachari, M. Venkatramier, and M. Bhimasena Rao. Pandit Oudh Upadhyaya has written on Cyclotomy and the present writer on Arithmetic Functions.

HISTORY OF MATHEMATICS

Various historical studies relating to Modern Mathematics and Medieval Indian Mathematics have been published by Ganesh Prasad, A. C. Bose and P. C. Sen Gupta. G. R. Kaye's deprecatory view of the originality of Indian Mathematics has been vigorously contested by a band of writers, chief of whom are Mazumdar, Bibhutibhushan Datta, Sarada Kanta Ganguly and A. A. Krishnaswami Aiyangar.

APPLIED MATHEMATICS

Ganesh Prasad, S. K. Banerjee and others have initiated and inspired a considerable volume of work on the Potential Theory, Dynamics, Hydrodynamics, Optics, Wave-propagation and allied branches of Theoretical Physics. The names that may be mentioned in this connection are Bibhutibhushan Datta, Mazumdar, N. M. Basu, and Subodhchandra Mitra, H. P. Banerjee, S. C. Dhar, N. R. Sen and Suddhodan Ghosh, B. N. Sen, Nripendranath Ghosh, Jyotirmaya Ghosh, Bholanath Pal, Abanibhushan Datta, Nripendranath Sen, S. C. Kar, etc. Savoor has studied the Stability of the Pear-shaped Figure of Equilibrium of a rotating fluid.

N. K. Basu and N. K. Bose have studied the dynamics of the Aeroplane. The question of Stability in Motion through the Air has been studied and discussed by J. M. Bose, Bryan and others.

There has been published a considerable amount of applied mathematical work in Optics, Atomic and Molecular Physics, etc., with the centre of interest in Physical theory. The names of Sir C. V. Raman, M. N. Saha, D. Bose, K. C. Kar, D. N. Mallik and their pupils and co-workers and of G. S. Mahajani should be mentioned in this connection.

P. C. Mahalanobis, A. A. Krishnaswami Aiyangar, Adyantayya, K. B. Madhava and M. Vaidyanathan have contributed to the theory and applications of Statistics.

THE SPIRIT AND CULTURE OF ĀYURVEDA

The cultural conquest of the Indian mind by foreign influence has been so progressive and thoroughgoing during the last six or seven centuries that at the present day true reverence for ancient culture and devoted endeavour for its resuscitation are construed as a craze or a hobby by the modern scholar steeped in Western culture. Things of archæological or even linguistic interest may fascinate him for some time, but the advanced culture implied by them seldom makes a permanent impression on his mind. He can hardly realize it, much less gauge it, at its proper value. It is just here that modern patriotism falters sadly and loses sight of its true goal.

As an instance in point may be cited the Science and Art of Āyurveda —that great heritage of ancient India which survives to the present day and is regarded as a boon by the vast majority of the suffering millions of India.

In the present discourse I propose to deal with this subject and present the reader with a glimpse of its past history and a brief survey of its present state and future possibilities. Fortunately the renaissance of Āyurveda is just begun, thanks to the efforts and sacrifices of some devoted workers in the different provinces of India. But the progress to be made must be by slow spadework, even though it be hampered at every step by the blind conservatism of a section of Āyurvedists on one side and the callous indifference of the majority of the alumni of our universities on the other side. It is worth while, therefore, to stimulate their imagination by presenting a true picture of Āyurveda before them—*Āyurveda as it was and as it should be* when, freed from the mist of ignorance and conservatism, it develops to its full stature and glory.

Looking into the dim vistas of the past, we find on the evidence of impartial historians like Prof. Heeren, Pocock, etc., that this great healing art and science of India once shed its lustre not only on India, but also on contemporary civilized countries of the West and the East, namely, Arabia, Egypt, Rome, Greece and China. It is now a proved fact that these countries drew most of their medical knowledge, skill and inspiration from this fountain-head of yore. Originated by the great sages of India and developed gloriously in specialized sections by the

devoted endeavours of their successors, Āyurveda went on growing and expanding its scope till blows upon blows of foreign invaders—the Scythians, the Huns and the Saracens—stunned its growth and destroyed its vast literature through arson and incendiarism. The harrowing tales of these times have only been partly told by the historians. The real extent of the loss suffered by Āyurveda through these depredations can be judged unmistakably by the vast amount of missing ancient literature quoted from by writers who flourished even eight or nine hundred years ago. Any scholar of Āyurveda who makes intensive study of extant authoritative literature on the subject would sigh for them at every step. I have shown in the Sanskrit introduction of my work *Pratyaksha-Śarīram* (a text-book of Anatomy in Sanskrit) that no less than sixty original Saṁhitās or ancient authoritative works like *Suśruta* and *Charaka Saṁhitā* existed a thousand years ago, of which only fragments now survive in the numerous quotations found in the authentic commentaries of old.

WHAT IS ĀYURVEDA

Āyurveda, according to all definitions, is the science and art (Veda) of life (*āyus*). Put more explicitly, Āyurveda deals with life in all its phases—philosophical and biological and comprises both preventive and curative medicine and surgery. It is the great healing art of ancient India which aims at giving us "a happy and benevolent life" by showing the ways and means to it. Developed highly in eight specialized sections, namely, the Science and Art of Medicine (*kāyatantra*), Surgery and Midwifery (*śalyatantra*), Treatment of eye, ear, nose and throat (*śālākyatantra*), Psycho-therapy (*bhūtavidyā*), Pediatrics (*kaumāra-bhṛitya*), Toxicology (*agadatantra*), the Science and Art of restoring health in old age (*rasāyanatantra*) and Sexual Rejuvenation (*vājīkaraṇatantra*) —it is based on sound scientific data and principles which are clearly described in extant ancient literature.

Now, however, Āyurveda survives mainly in one section—the Practice of Medicine. Yet it is not merely an "Empirical system of herbal treatment," as the detractors of Āyurveda dub it in their prejudice and ignorance. The followers of Āyurveda in the recent past and even at the present day are responsible to a certain degree for this calumny cast upon it by ill-informed critics. Contrary to the true spirit of Āyurveda, her followers have permitted its scientific foundations to crack and crumble. They have allowed the important sections of Āyurveda

dealing with surgery, midwifery, etc., to fall into the shade of oblivion. They have enthroned sophistry in the place of science and have allowed various weeds to grow and obstruct the genial current of scientific progress which marked the onward advance of Āyurveda in its palmy days. Fortunately the kernel of Āyurveda is still preserved to a fair extent in all its eight sections, and there is yet time to reclaim and rebuild the lost sections.

THE SPIRIT OF ĀYURVEDA

The spirit of Āyurveda is the spirit of science and something more. It is the spirit of observation and experimental research, reinforced by the transcendental intuition (*divyajñāna*) of the *ṛishis*. This last is no doubt the special characteristic of Āyurveda, no parallel of which is to be found in the West. Modern sages are just beginning to realize that by concentration and meditation the mind is capable of yielding sublime revelations. I believe all inventions and discoveries arise out of flashes of such revelation, though the process is hardly understood in the present workaday world.

Respect and eagerness for the assimilation of truth " from whatever source it might come " was also the key-note of Āyurveda. Charaka enjoins universal comradeship in our journey towards truth and speaks eloquently about it (*Vimāna*, Ch. VII).

Āptāgama or the authoritative writings of the *ṛishis* (seers) was no doubt greatly respected, but the term is defined in the following words which deserve to be written in letters of gold:

" *Āptāgama* means the Veda; but such *śāstra* as is based on observation and experiment and the deductions of which have been tested as sound by competent judges is also *āptāgama* " (*Charaka Saṁhitā*, *Sūtra*, Ch. XI).

The noble spirit of the *ṛishis* which enjoined giving relief to suffering humanity without any consideration of base lucre is an outstanding feature of Āyurveda. Says Charaka: " Not for money nor for any earthly objects should one treat his patients. In this the physician's work excels all vocations. Those who sell treatment as a merchandise neglect the true treasure of gold in search of mere dust."

This is not merely a noble sentiment. The practitioners of Āyurveda in all parts of India followed this tradition till even half a century ago. The tradition survives even now amongst a few who live the life of poverty for the ideal of giving free aid to suffering humanity.

Another point which I should like to stress particularly is the liberal spirit of assimilation which characterized the practice of Āyurveda even during the Mughal period. Bhāva Miśra whose comprehensive work *Bhāvaprakāśa* was written in the sixteenth century described many foreign drugs like Rhubarb, Opium, Tobacco, etc., and advised their use in Āyurvedic preparations. The present day Āyurvedic physicians are using them freely, though they are reluctant to accept openly such valuable drugs as Quinine, Digitalis and Aspirin.

Charaka has said distinctly: "Whatever is conducive to cure is the right remedy." This maxim is now followed more in the West than in the East. The British Pharmacopœia has assimilated nearly one hundred and fifty Indian indigenous drugs, but how many valuable Western drugs have been assimilated by Āyurvedists? They cannot boast that there is no need, but they are shy and timid. Should they not deal with this matter in open conference and prepare an addendum to the present Āyurvedic Pharmacopœia?

The Unani system has assimilated hundreds of Āyurvedic drugs the names of which they have changed so effectively that the Āyurvedists, at least most of them, fail to recognize them as their own. I have found out by patient research that many unidentified Āyurvedic drugs the names of which occur in Charaka and Suśruta can be picked out and identified as ours from the vast repository of the Unani Pharmacopœia.

THE ACHIEVEMENTS OF ĀYURVEDA

The lay public judge Āyurveda by the narrow scope into which it has now shrunk in practice and have little idea of the vast field originally covered by it. Indeed, great and striking were its achievements in the past both in the fields of medicine and surgery. From the Vedic times Āyurveda went on adding fresh knowledge to its treasury until it developed to its full glory just before the Buddhistic period. At this time the Rasa-Vaidyas or the chemist-physicians stepped in and almost changed the face of Āyurveda by discovering the therapeutics of various mineral substances which were employed by them with great success. They flourished in India about the time of Jesus Christ and established such a reputation both as physicians and as alchemists that Arabia and Europe sat at their feet to learn their new discoveries. Many manuscripts of that period are still available in original Sanskrit and in their renderings in Arabic and old English. There can be little doubt that

these physicians were the fathers of modern chemistry as Sir P. C. Ray has rightly pointed out in his work of Hindu Chemistry.

Let us not forget, however, that they pursued their vocation with a singular noble object in view, namely, " When the perfection of Rasa (mercury) is achieved, I shall make humanity free from decay and death."

The effective preparation known as 'Makaradhvaja' is a gift of these noble workers and is looked upon by many as a therapeutic mystery. The various metals and metalloids now used extensively by Āyurvedic physicians all over India are no doubt the bulwarks of Āyurveda built on the foundation of the researches of these noble workers. The number of their works yet available is legion and any modern chemist may spend a couple of years profitably in investigating the facts embodied in them, which are unknown to the West. The " Siddha " system of Southern India is a legacy of a particular sect of these chemist-physicians which has established a realm of its own there apart from and as a rival to ancient Āyurveda.

To revert once more to the achievements of the long past, we may mention a few facts briefly with pardonable pride. When the greater part of the world was merged in the abyss of ignorance, it is the Indian sages who first understood the necessity of dissection of the human body for the education of physicians and surgeons. Says Suśruta writing in unmistakable language two thousand years ago: " Therefore whoever wishes to get a clear idea of *śalya* (surgery) must prepare a corpse in the proper way and see by careful dissection every part of the body in order that he may have definite and doubtless knowledge " (*Śārira*, Ch. V). Compare with this what Dr. Puschmann says in his *History of Medical Education* about the practice of dissection in Europe: " Dissection of the human subject was in the first centuries of the middle ages opposed by religious and political ordinances and also by social prejudices."

Circulation of blood was understood with fair clearness long, long before the much-talked-of discovery by Sir William Harvey in the seventeenth century. Let me quote a passage here to illustrate this:

" From that great centre (the heart) emanate the vessels carrying blood into all parts of the body—the element which nourishes the life of all animals and without which life would be extinct. It is that element which goes to nourish the fœtus *in utero* and which flowing into its body *returns to the mother's heart* " (*Charaka Saṁhitā, Sūtra*, Ch. XXX).

And wonder of wonders, what was discovered by the ancient sages of India over a couple of thousand years ago came as so great a surprise to most medical men in Europe in Harvey's time that " no doctor above the age of forty could be persuaded to believe in the impossible suggestions " of Harvey who was condemned and hooted out of society for his discovery (*vide* Hume's *History of England*).

The theory of *vāyu*, *pitta* and *kapha* was also a great discovery which, unfortunately, has been much misunderstood by Western scholars who judge them from the wrong translation of these terms as wind, bile and phlegm. The proper explanation of this theory will take up a treatise by itself, but let me observe here in passing that the word *vāyu* does not imply wind in Āyurvedic literature, but comprehends all the phenomena of motion which come under the functions of cell-life—or to be more explicit, functions of the central and sympathetic nervous systems; that the word *pitta* does not essentially mean bile, but signifies the function of metabolism and thermogenesis or heat-production, comprehending in its scope the process of digestion, coloration of blood and formation of the various secretions and excretions which are either the means or the ends of tissue-combustion; and that the word *kapha* does not mean phlegm merely, but is used primarily to imply the function of cooling and preservation (thermo-lysis) and secondarily the production of the various preservative fluids, e.g. mucus, synovia, etc., which are the manifest forms of that function. I regret, I cannot do justice to this subject here for want of space but I hope the above would give a clue to the student who intends really to investigate.[1]

It must be remembered that the theory of *vāyu*, *pitta* and *kapha* is not the same as the old exploded humoral theory of the Greek and Roman physicians who, though they borrowed the idea from Āyurveda, probably failed to grasp the true meaning of the theory. I am convinced that the truth and the value of the Āyurvedic theory can be verified. It affords sensible explanations of certain otherwise inexplicable facts in the physiological cycle of life as well as in the causation and amelioration of diseases and their symptoms. It can guide us in understanding the laws of general Therapeutics—which it would be much to the advantage of any medical man to learn in the way Āyurveda teaches them. I dare say that studying the

[1] The reader is referred to the writer's paper " Science of Āyurveda " for better elucidation of this subject.

subject with an open mind, he will surely be led to believe in the theory. As we find in daily practice, even the half-educated Āyurvedic physician who remembers the laws of Etiology and Therapeutics and Dietary based upon this theory fares pretty well by the bedside of the patient.

In the field of Pharmacology and Pharmacy, the properties of drugs and foodstuffs were investigated by the five senses and by subjective and objective phenomena manifested on the human system. They are described by a terminology the meaning of which, properly understood, does not fail in most instances to give a correct insight into the science of therapeutics. Unfortunately, however, this terminology has yet remained a sealed book to those who have judged it from inaccurate translations. In Pharmacy, the art by which the properties of a drug are imbued in spirits (as in *āsavas* and *arishṭas*), in ghee, oil, syrup, etc., was well known. Therapeutics of mercury and its compounds and other minerals, finest preparations of which in a form assimilable by the human system are still made, show the great advances that mark the excellence of Āyurvedic Medicine to this day. For instance, it is not yet known to Western medical men that mercury, when combined with sulphur, as in black-sulphide or red-sulphide, can never produce mercurialism—a knowledge which is the birthright of all Āyurvedic physicians. I have seen Western doctors including such authorities as Sir Pardey Lukis use the well-known preparation of mercury known as Makaradhvaja without any prejudice and with a fairly proper judgement of its true value. Chemistry, till now at least, can little explain why the natural salicylates are more effective than the synthetical salicylates, why beechwood creosote is more valuable than the coal-tar derivative of the same name, why the true mineral waters are more reliable than their exact imitations made by the chemists.

In this connection, I should also mention, in passing, that one particular feature of Āyurvedic works, even of later periods, was that many foreign drugs having valuable therapeutic qualities could be taken up and used without any prejudice. Such, for instance, are drugs like Rhubarb, Opium, Topchini, etc. (*vide* Bhāva Miśra).

In Medicine proper, it is enjoined that diagnosis should be made by the five senses supplemented by interrogation. The method of direct auscultation or hearing of breath-sounds, etc., was probably known to them, as we find its evidence in *Suśruta*, *Sūtra*, Ch. X, which seems to refer not only to wounds of arteries, but also to crepitations or râles.

audible in pneumonia and other lung-diseases. The bacterial origin and the infective nature of certain diseases as the eruptive fevers, leprosy, small-pox, tuberculosis, etc., have also been clearly indicated in such passages as these: "All forms of leprosy (and some skin diseases) are due not only to the derangements or *vāyu*, *pitta* and *kapha* but also to microbes" (*Suśruta Saṁhitā*, *Nidāna*, Ch. V).

Again, "Various skin-diseases and leprosy, fever, pulmonary consumption, ophthalmia and diseases borne by air and water are usually capable of transmission from one man to another" (*Ib.* Ch. V).

Also, "There are various fine organisms which circulate in the blood and are invisible to the naked eye; usually these look like round bodies of copper colour and are without legs. They give rise to various forms of skin diseases, etc." (*Suśruta Saṁ.*, *Uttara*, Ch. LIV).

In Surgery, the progress made seems to have been wonderful. Major operations like amputation, laparotomy (*i.e.* opening the abdomen for intestinal obstruction or other troubles), lithotomy (or extraction of stone) and even trephining of the skull were practised by Āyurvedic surgeons. They are described in the ancient works of Suśruta and Vāgbhaṭa. The excellent classification and description of the surgical instruments under different heads as found in Suśruta and Vāgbhaṭa compel the admiration of those who take pains to study them with care. There can be little doubt that the old Greek and Roman surgical instruments that are found preserved in the museum of Naples were only the replicas of Hindu instruments yet found accurately described in texts at least two thousand years old. Unfortunately, however, here too as in other branches of Hindu Medicine, ancient surgeons have been wronged by certain Indian(!) scholars of Western Medicine giving fantastic descriptions of Hindu surgical instruments which never existed except in their imagination. In a paper read before the Sāhitya Sabhā of Calcutta in 1913 and in a lecture before the fifth All-India Āyurvedic Conference in 1914 (published in the *Indian Medical Record*) I have tried to show from old authentic texts that most of the modern surgical instruments are only modified reproductions of the ancient instruments. I have already cited instances of these there, namely, the *Siṁhamukha yantra*, which is nearly identical with the modern Lion forceps, and Allingham's speculum, which agrees closely with the "four-bladed expansible instrument" described by Vāgbhaṭa (*Ashṭāṅga-hṛidaya*, *Sūtra*, Ch. XXV).

In Midwifery, the different malpositions of the fœtus at birth were well understood by the ancients, who devised the different methods of treatment by version or turning the fœtus *in utero*. Embryotomy and Cæsarian section described in ancient works stand as monuments of past glory.

Last, though not least, come the two specialized branches of Medicine —of Hygienic Medicine I should say—in which methods of warding off disease in old age and keeping virility intact have been dealt with. These are the branches known as the *rasāyana* and *vājīkaraṇa*. The main object of such treatment was the restoration of vigour and immunity (or *vaishṇavī śakti*, as they called it) by the preservation of the vital fluid, the necessity of which is now faintly realized in Western Medicine. The researches of Brown-Sequard and Metchnikoff and latterly the demonstrations of Voronoff have only recently shown the importance of this subject in Western Medicine. These two sections of Medicine, however, yet survive partly in Āyurvedic Medicine and partly in Unani. I would draw the attention of all medical men to the necessity of patient research in these lines of Āyurvedic Medicine.

THE CULTURE OF ĀYURVEDA

That the culture of Āyurveda was thus a comprehensive one can be judged from the above notes, but the main goal of the culture was the high ideal of carrying free medical aid to suffering humanity, as I have already pointed out in the first part of this article. The development of the special senses and perhaps of the sixth sense, as some scientists of the present day call it, was the means to that noble end. The physician was required to lead a life of austerity, solemn meditation and sacrifice. Even when he was obliged by force of circumstances to earn his livelihood through his profession, he was not allowed to charge fancy fees and heavy prices for his medicaments. The high ethical code of Āyurveda is different from the medical ethics of the present day. The following passage of Charaka formulates the ethical code of Āyurveda:

" You should seek the happiness of all beings. Every day, standing or sitting, you should try to heal the sick with your whole heart. You should not demand too much from your patients even to maintain yourself. You must not touch another man's wife even in thought, nor hanker after others' wealth. You should be sober in dress, and temperate, you must not commit a sin nor be an abettor of it and you must

speak words that are gentle, clean, and righteous," and so on (*Charaka Saṁhitā, Vimāna*, Ch. VIII).

I need hardly add that the ethical code known as medical ethics now is only the rules of conduct enjoined by a trade guild for the protection of a fraternity out to make the most of its profession for secular purposes. The ideal of Āyurveda was very different.

THE RENAISSANCE OF ĀYURVEDA

Fortunately the renaissance of Āyurveda has just begun. The day of its birth was heralded by the late Pandit Madhusudan Gupta of Bengal, Professor of Āyurveda in the Government Sanskrit College of Calcutta, who started, rather resumed, the dissection of human body in the newly started Medical College of Bengal in the year 1827. The notable event was announced and glorified by the boom of cannon from the ramparts of the Fort William, Calcutta. Since then gradually the Āyurvedic physicians of Bengal who illumined the medical profession in the last century began to realize the importance of re-establishing Āyurveda once more on the solid foundations of Anatomy and Pathology. Most of them sent their boys to the Medical College of Calcutta and dreamt rosy dreams of the resuscitation of Āyurveda in the near future. Some of the products of such double education set upon themselves the task of putting their house in order. With the advent of the twentieth century was started the All-India Āyurvedic Conference, which working steadily for the last twenty-five years has been able to establish the All-India Āyurveda Vidyāpīṭha which holds its examinations on sound lines in about thirty important centres distributed over the length and breadth of India. But the big Āyurvedic Colleges endeavouring to teach Āyurveda in all its eight sections were first started in Calcutta and then in Madras, Bombay, Hardwar, Delhi, Patna and other places. The Hindu University of Benares also started an Āyurvedic College and hospital of no small dimension. The Governments of Madras, United Provinces and Bihar and Orissa have come forward, thanks to the unceasing efforts of their patriotic ministers, to establish and maintain Āyurvedic Colleges with a liberal hand. The zeal and munificence of some Bengal Kavirajas have given us some highly equipped Āyurvedic Colleges in Calcutta. The Corporation of Calcutta helps these institutions to a considerable extent, but the Government of Bengal, which was instrumental in starting the renaissance of Āyurveda a century ago, has

as yet given only a half-hearted response which has not materialized into anything tangible.

In conclusion I appeal to my countrymen to awake to the necessity of the restoration and development of Āyurveda for their own benefit and for the benefit of the country. It is not merely patriotism that should be their spring of action. I do not hesitate to assert that Āyurveda can give many things to the Western world and many modern discoveries are only rediscoveries of ancient truths.

BOTANY IN INDIA—PAST AND PRESENT

INTRODUCTION

The science of Botany, or the study of plants as such, attracted considerable attention of our forefathers for a good many reasons. First of all, plants were intimately connected with trade and commerce in which India, even in the Mohenjo-daro period, excelled, having commercial intercourse with western Asia, eastern Africa and many of the countries of modern Europe, as well as with the East. The archæological and other finds show that the distant Hungary as well as the distant Easter Island was commercially connected with this land of ours. Most of the commodities used in that extensive trade were plant products, and the vessels in which these used to be transported were made of wood. This made a scientific study of plants and plant-life a necessity, and Botany came to be cultivated along with other sciences by the ancient Indians.

We have sufficient evidence to show that the science of Medicine, Agriculture, Arbori-Horticulture and Sylviculture were greatly developed in India, and the science of Botany, on which all these sciences are based, must have undergone a corresponding process of development. From the *Arthaśāstra* and similar treatises we learn that every good Government used to provide the citizens under it with public parks, pleasure-gardens, hunting forests, etc., for enjoyment, recreation and sports—all placed under the supervision of experts. The consecration of gardens, a Vedic ceremony, and the dedication of such gardens to gods and to ascetic fraternities were a prevalent practice during the Buddhist period. Maintenance of these gardens required a scientific knowledge of plants, and they were placed under superintendents (*ārāmādhipatis*).

The scientific study of plants, or Botany, then evidently existed in ancient India. This science was called *Vṛikshāyurveda*, or, as the major portion of the medicinal drugs came from plants, it was, in the alternative, known as the *Bheshajavidyā*. Both these terms occur in ancient Sanskrit texts, the *Agni Purāṇa*, *Bṛihat Saṁhitā*, etc. In the *Arthaśāstra* we get the term *Gulmavṛikshāyurveda*, and in the *Dhanvantari Nighaṇṭu*, the *Bheshajavidyā*. *Vṛikshāyurveda* literally means "knowledge of tree-life," and the *Gulmavṛikshāyurvedajña*, or

the applied botanist, according to the *Arthaśāstra*, *Agni Purāṇa*, *Bṛihat Saṁhitā* and other Sanskrit texts, was to learn the art of the collection and selection of seeds, selection of soil, sowing, the successful germination of seeds, the various means of propagation such as grafting and cutting, planting, nursing, manuring, rotation of crops, cultivation under favourable meteorological conditions, treatment of plants in health and disease, classification and identification of plants, location of plants for improving the æsthetic and hygienic surroundings of the homestead, and so on. As an illustration, we may cite the test to which Bhikshu Ātreya, the celebrated teacher of Medicine at the University of Taxila, put his equally celebrated pupil Jīvaka, afterwards, the physician of Bimbisāra. He was, in the course of the examination, asked to collect, describe, identify and mention the properties of plants that were to be found within four *yojanas* of the university town, and this Jīvaka did to the entire satisfaction of his teacher (Preface to Viraja Ch. Sen Gupta's *Vanaushadhi-darpaṇa*, Vol. I).

Unfortunately for us, neither the *Vṛikshāyurveda* nor the *Bheshaja-vidyā* is extant now. But we still have some material in the form of scattered references throughout the Sanskrit and Pali literature, out of which it is possible to build up, though in a very incomplete form, the botanical science, which will at least give an estimate of our fore-fathers' contribution towards the advancement of Botany in that remote age. We now propose to deal with the subject.

A. STUDY OF BOTANY FROM THE VEDIC PERIOD DOWN TO THE GUPTA PERIOD (*c.* 600 A.D.)

It will be seen that facts in connection with Botany have all been culled from stray references, generally made by way of analogy, in non-botanical texts. Here we have found it convenient to arrange them in a more systematic order as in a modern text-book, and we shall proceed in this order: (1) Morphology, (2) Anatomy, (3) Physiology, (4) Reproduction, (5) Ecology, (6) Taxonomy, (7) Evolution, (8) Heredity and (9) Botanical Marvels.

I. MORPHOLOGY

(i) *Germination*—In order to study the life-history of a plant one must begin from the stage of seed in which the plant lives in the embryonic state. The awakening of the embryo under suitable conditions is known as germination. In Sanskrit it is called *aṅkurodbheda*:

this is the most appropriate word for germination, as during the process the *aṅkura*, or the seedling, comes out by piercing the seed-coat, and this happens only under certain conditions, namely, *ṛitu* (proper season, *i.e.* general warmth), *kshetra* (good soil) and *ambu* (water) (*Suśruta, Śārīrasthāna*, ii. 33). In Guṇaratna's commentary on *Shaḍdarśana Samuchchaya* (verse 49) we find it mentioned that seeds of banyan, *Aśvattha* and *Nimba* (as in other cases) sprout during the rainy season (hot season) under the influence of dew and air.

Thus we see that the three conditions of air, warmth and water necessary for successful germination were already known to the people of India long before the Christian era. The term *uttānapāda* found mentioned in connection with germination is also significant, as during germination it is the *pāda*, or the root, that is seen to come out first.

(ii) *Descriptive Botany*—This is necessary for the proper identification of plants, particularly, when the number becomes unusually large. After the germination of the seed the plant grows and becomes adult. With the growth of the plant we find new members developed. In order, therefore, that the plant may be properly described, its members are named and characters noted; and we find this particular branch of the science in course of development.

Thus even in the Vedic texts we find that plants are classified as trees, shrubs, herbs, creepers, the spreading, the bushy, etc. (*Atharva-Veda*, VIII. 7), and the common people knew the story of plant-life by the time of the *Bṛihadāraṇyaka Upanishad* (IV. 6. 1) where a verse runs, "The essence of water is embodied in plants, flowers represent the essence of plants and the essence of flowers is the fruit." But a regular enumeration of the parts of a plant we find in the *Taittirīya Saṁhitā* (VII. 3. 19. 1) and *Vājasaneyī Saṁhitā* (XXII. 28) where it is said, "It (the plant) comprises *mūla* (root) and *tula* (shoot); (the latter consists of) *kāṇḍa* (stem), *vatsa* (branch), *pushpa* (flower) and *phala* (fruit), while the *vṛikshas* (trees) have in addition a *skandha* (trunk), *śākhā* (branches) and *parṇa* (leaves) (*Tait. Saṁ.*, VII. 30. 20. 1; cf. also *Ṛig-Veda*, I. 32. 5; *Atharva-Veda*, X. 7. 38). An instructive description of the importance of the various members of a plant is given by Śukrāchārya by way of analogy:

"The king is the root of the state, the councillors are the stems or trunks, the commanders are the branches, the troops are the leaves and flowers, the subjects are the fruits and the land is the seed" (*Sacred Books of the Hindus*, XVI, p. 189). A similar description is also to

be found in the *Vishṇu Purāṇa* (VII. 37-39) where the plant is primarily divided into the *mūla* or *pāda* (the subterranean part) and the *vistāra* (the subaerial part). We now briefly notice the terms used in describing the different parts of a plant:

Mūla—This is the most significant term for root. *Mūla* is the most important organ of the rooted plant. This fact is also noted in the *Śukranīti* (I. 767) where it is said, "Just as the branches of a tree wither up (and the tree dies) when its roots decay," etc. The word *pādapa* (drinker of *rasa* from the soil by roots) for plants at once shows that the real function of the root was a common knowledge. *Mūlas* are primary roots. Adventitious roots are called *śākhā śiphā*, and fibrous roots *śiphā* or *jaṭā*; even the bulbous roots are distinguished in the *Arthaśāstra* (XXIV. Bk. II). Thus the terms used in the description of roots are quite adequate and suggestive of their functions and origin.

Tula or *vistāra*—This comprises two parts, namely, *kāṇḍa* and *parṇa*; *kāṇḍa*, stem or axis, may be with *parva* (internode) and *granthi* or *parvasandhi* (node) from which the *parṇa*, or leaf, springs. Plants may be *sakāṇḍa* or *aprakāṇḍa* or *stamba*. Branchless stem or caudex is called *sthāṇu* or *śaṅku*. Bushy plants are called *kshupa*. *Śākhā*, *pratiśākhā* and *anuśākhā* are used in describing branches in descending orders. Underground stems are called *kanda*; they look like roots but are not roots and serve as a means of propagation; as examples are mentioned, *āluka* (potato?), *laśuna* (garlic), etc., (*Kāmasūtra*). The bud is called *pravāla*.

Parṇa—Leaf is so called because it is green; it is also called *patra* as it falls soon. It may be *sabrinta* (petiolate), or *abrintaka* (sessile); it may be *ekapatra* (simple, unifoliate), or *dvipatra*, *tripatra*, *saptaparṇa*, and so on, according to the number of leaflets in a compound leaf. The shape of the leaf is also noticed, as appears from such terms as *aśvaparṇaka* (like the ears of the horse, as in *Shorea robusta*), *mūshika-parṇī* (like that of a mouse, as in Salvinia), *kiśaparṇī*, *haṁsapadī*, and so on.

Pushpa, *prasūna*, *sumanas*—These are all very appropriate terms for flowers. The unopened flower buds are called *kalikā*, *koraka*; opened flower buds *mukula* and *kuṭmala*, and full-blown flowers *vikacha*, *sphuṭa*; a bunch of flowers, if cymose, is called *stavaka*, *guchchhaka*, and if racemose, is called *mañjarī*. Particular types of inflorescence are called *śrīhastinī* (helicoid), *chhatrā* (umbel), etc. Flower stalks are called *prasava-bandhana*, that is, that which binds flowers and fruits

to the mother-plant. Floral members are called *puspachchhada* (sepals), *pushpadala* (petals), *kesara* (stamens), *parāga*, *kesara-reṇu* (pollens); the last two terms at once show that the pollens are dust-like and are carried far. It seems that the gynœcium has not yet been recognized, as no suitable term differentiating this organ from the male andrœcium is found at this period.

Phala—*i.e.* the result of a previous process. This is a very scientific term, as fruits are produced as consequences of fertilization. Green fruits are called *salāṭu*; fleshy fruits, *jālaka*, *kshīraka*; dry ones *vāṇa*; a legume, *śimbī*. The fruits are classified individually, such as *āmra* (mango), *jambu* (fruit of *Jambu*), *aiṅguda* (that of *Iṅgudī*), *vaiṇava* (that of bamboo), and so on.

Vija—Here we get a more or less complete description. *Vija* is the most scientific term for seed, for it is that in which the plant germinates, or takes its origin. Seed-coats are called *vījakosha*, the kernel or endosperm, *śasya*, and the cotyledons, *vījapatra* or *vījadala*. A beautiful description of the life-history of mango trees is found in the *Śārṅgadhara Paddhati*.

Different kinds of plants are recognized. Thus the weak plant is called *latā*, *vallī*, *vratatī*. They are of two kinds—those that go to the top of a tree and those that spread on the ground. *Vallī* twines round the stem or a support; epiphytes are called *vṛiksharuha*; parasites, *vṛikshādanī*. Algae and mushrooms are recognized as plants, and are respectively called *jalanīlī* and *chhatrā*. The habitat of mushrooms is given in *Suśruta Saṁhitā* (*Sūtrasthāna*, XLVI); mosses are called *śaivāla*, and the diseases of the cereals and sugarcane, *i.e.* blight and mildew, are mentioned as early as in the *Vinaya Texts* (*Sacred Books of the East*, XX, p. 326).

II. INTERNAL MORPHOLOGY OR GROSS ANATOMY

The detailed study of internal morphology became possible only after the invention of microscopes as late as the sixteenth century. The ancient Hindus distinguished five regions in the body of plants, namely, *tvach* (skin), *māṁsa* (soft tissues or bast), *asthi* (wood, or bone), *majjā* (pith), and *snāyus* (fibres in the bast). The *Bṛihadāraṇyaka Upanishad* (III. 9) divides *māṁsa* into *valkala* (bark) and *śakara* (bast fibres). The healing up of wounds by natural recuperation is mentioned in Śaṅkaramiśra's *Upaskāra*, and in Guṇaratna's commentary.

III. PHYSIOLOGY

That plants absorb food materials from the soil in a state of solution was already known to our forefathers, as the name *pādapa* for plants shows. The greatest achievement on the part of the ancient Indians was the discovery, not perhaps on a scientific basis, of the fact of absorption, transport and preparation of food in the leaves in the presence of solar energy and air. All these facts we find nicely described in two stanzas in the *Śāntiparva, Mahābhārata.* " Just as water may be drawn up by sucking through the lotus petiole applied to the mouth, so also plants (with roots) drink (absorb and draw up the stem) water (watery solution) with the help of air."

After the food materials are brought into the leaves through the uninterrupted passages in the stem (xylem vessels) by the suction force developed in the leaves with the help of air, the process of assimilation goes on.

" With the help of *agni* (solar energy) and air (CO_2) this water (soil sap—which is absorbed through the roots and conveyed to the leaves) is digested, *i.e.* is prepared into food proper (*sneha*). And it is on account of the assimilation of this food that plants attain development and become graceful."

Thus all the main factors in connection with the absorption, transport and assimilation of food materials were known to our forefathers long before Stephen Hales demonstrated them in 1727 A.D. Even the knowledge of the storage of solar energy in the particles of food manufactured can be traced to two verses in the *Ṛig-Veda* (II. 1. 14, and VIII. 43. 9). The importance of green leaves in the life of a plant is also noticed.

Circulation of sap—It was discovered by Harvey in the 17th century, but the Indian botanist described it long before the Christian era: it was even discussed by Kaṇāda in his Vaiśeshika Philosophy (5.2.7), and Śaṅkaramiśra in his *Upaskāra* (*Sacred Books of the Hindus*, VI., p. 177). According to the latter " water poured at the roots goes up in all directions through the interior of a tree. Neither impulse, nor impact, nor the sun's rays prevail there. How then is it caused? " The phenomena of osmosis and diffusion were not known to them; hence we find them explaining it thus: " The action by which water rises and causes the growth of the tree results from destiny (of the soul born as the tree) as its efficient cause and water as its coherent cause."

Exudation of sap (*rasasruti*)—It has been clearly described in *Rājanighaṇṭu*. The phenomenon of phosphorescence in plants is noticed and the plants showing this phenomenon are described as *jyotishmatī, jyotirlatā*. Even in the *Kumārasambhavam* this phenomenon is mentioned (I. 10).

Growth—Stages of infancy, youth and age of a plant were noticed. Such conditions as light, food and water necessary for normal growth were well known. The maximum age of a tree is given as ten thousand years and the causes of death are given as suitable and unsuitable food, accident and disease.

Movements—The phenomenon of movements in plants towards what is favourable and away from what is unfavourable, their capacity for sleep by closing up leaves at night, sensitiveness to touch, and even the opening of flowers at different times of the day are noticed.

Consciousness—Plants have been regarded as living beings since the Vedic times. Manu writes that plants possess a sort of dormant, or latent consciousness and are capable of pleasure and pain (*antaḥsaṁjñā bhavantyete sukhaduḥkhasamanvitāḥ*). A concise but clear discussion on the existence of life in plants is given in the *Mahābhārata, Śāntiparva*, Ch. 184. Further evidence is to be found in Guṇaratna's commentary, Udayana's *Kiraṇāvalī, Upaskāra* on Kaṇāda, and the *Bhāgavata Purāṇa*.

Reproduction and Sexuality—All the methods of reproduction now known were a common knowledge. In the Vaidyaka treatises of old we find mentioned the following well-known ways of propagation: *vijaruha* (by seeds), *mūlaja* (by roots), *skandhaja* (by cuttings), *skandhe ropaṇīya* (by graftings, layerings), *agravīja* (by apices), *parṇayoni* (by leaves) and *saunarudhaja* (?). Illustrations of all these methods are given in the *Bṛihat Saṁhitā, Arthaśāstra, Manu Saṁhitā, Abhidhāna-chintāmaṇi, Sumaṅgala-vilāsinī* and numerous other treatises.

The idea of sexuality in plants is vague and obscure, though there is a discussion in the *Hārīta Saṁhitā* (*Śārīrasthāna*, Ch. I.) as to how seeds are produced in plants. It is only in one instance that we find a male and a female plant distinguished and that is in the case of *Ketakī*, (*Pandanus odoratissimus*): the male one is called *Sitaketakī viphalā*, or *Dhūlipushpikā*, and the female one, the *Svarṇaketakī*: But this is based, it seems, on observation.

Respiration—This vital phenomenon, it appears, was not recognized by the ancient Indian botanist. We have not been able to gather any reference worth the name.

Rotation of crops—Rotation by fallowing has been mentioned in the *Ṛig-Veda* (VIII. 91. 5-6), and by sowing different crops alternately in the *Taittirīya Saṁhitā* (V. I. 7. 3). *Yuktikalpataru* (41-42) gives impoverishment of the soil as the reason for rotation.

IV. ECOLOGY

Lands were divided into three classes, namely, Jāṅgala, Anūpa and Sādhāraṇa, and the characteristic plants described, as early as in the Charakan period. The Jāṅgala is described as the region full of unobstructed open spaces, where a steady, dry wind blows, which is pervaded by expansive mirages, with rivers and rivulets scarce, abounding in wells and also in dry and rough sands. Plants given are *Khadira, Asana, Vadari*, etc. (Charaka and Suśruta).

The Anūpa region mostly abounds in rivers and is bordered by seas, swept by cold wind, impassable owing to its network of rivers and sheets of accumulated rain-water. The plants are *Vañjula, Hintāla, Nārikela*, etc. (Charaka, Suśruta, Varāhamihira and others). The *Amarakośa* gives the following plants as growing exclusively in water: *Saugandhika, Kalhāra, Hallaka, Indīvara, Kumuda, Padminī, Kokanada, Vāriparṇī* (Pistia), *Mūshika-parṇī* (Salvinia), *Jalanīlī* (Algæ) and *Śaivāla* (moss).

The Sādhāraṇa region is endued with creepers and plants and trees of both the classes, and the plants are: *Mandāra, Pārijātaka, Santāna*, etc.

In the *Arthaśāstra* (Ch. XXIV, 117, 118) the amount of rain that falls in these regions is given.

V. TAXONOMY

(i) *Nomenclature*: The naming of plants was really scientific and educative. Sir William Jones had to admit that "Linneus himself would have adopted them had he known the learned and ancient language of this country." The principle adopted can roughly be arranged in the following manner:

(a) *Special association*: Bodhidruma, Aśoka, Śivaśekhara, Yajñadumura, etc.

(b) *Special property*: Medicinal:—Dadrughna, Arśoghna, etc. Domestic utility:—Vānīra, Dantadhāvana, Lekhana, Kārpāsa, etc.

(c) *Special features*: Phenila (Soapberry), Bahupāda, Charmin, etc.

(d) *Special morphological features*: Tripatra, Kiśaparnī, Pañchāṅgula, Hemapushpa, Śatamūlī, Śataparvikā, etc.

(e) *Local association*: Sauvīra, Chāmpeya, Māgadhi, Odrapushpa, etc.

(f) *Environmental association*: Nadīsarja, Jalaja, Maruvaka, etc.

(g) *Other characteristics*: Vakula, Śītabhīru, Māghya, Śāradī, etc.

It is not to be understood that only one name was given to the plants. As the plants were studied from the medicinal point of view as well, each plant was given at least two names: one for their identification by common people, and the other by the student of medicine. The former was called *Parichayajñāpikā saṁjñā*, based on some salient external features, and the latter on some medicinal or other properties—*Guṇaprakāśikā saṁjñā*. Thus the plant Sesbania is called *Vakrapushpa* (*i.e.* with papilionaceous flowers) and *Vraṇāri* (foe of boil); similarly, Ricinus Communis as *Chitravīja* (with painted seeds) and *Vātāri* (enemy of rheumatism), and so on.

(ii) *Classification*—It was based upon three distinct principles, namely, *udbhida* (botanical), *virechanādi* (medicinal) and *annapānādi* (dietetic).

(a) *Botanical:* Rudiments can be traced to as early as the *Ṛig-Veda* (X. 97), and the *Atharva-Veda* (VIII. 7. 4). Manu gives an elaborate classification, so do Charaka and Suśruta, such as:

Vanaspati—those that bear fruit without flower;

Vānaspatya—those that bear flowers and fruits; also called *vrikshas*.

Oshadhis—*i.e.* annual plants.

Vīrudh, latā—plants creeping on the ground (*pratāninī*) and twining (*vallī*).

Gulma—herbs with succulent stems.

Tṛiṇa—grasses including bamboos which are described as *triṇadhvaja*; *avatānas*, *drumas*, etc.

Plant families as such, or natural orders, were not recognized. But allied plants, or varieties, or even different species were grouped together into what may be called a genus based on floral characters. The specific

characters were taken primarily from the colours of flowers. Thus the genus *Kovidāra* includes the white, yellow and red-flowered species. The first one is again divided into two varieties.. Similarly, *Balā* includes four species—*Balā, Atibalā, Mahābalā, Nāgabalā.*

(b) *Medicinal*—But more stress is given on medicinal and dietetic classification. Charaka divides plants into two main divisions. Purgatives (*virechana*) and astringents (*anupāna*); the purgatives are 600, and astringents 500 in number. The astringents are divided into fifty groups under ten *vargas*, or major heads. These include every item of therapeutics. Suśruta, however, classifies plants under thirty-seven sections, or *gaṇas*. And all plants medically known till his time are placed under one or the other group.

(c) *Dietetic*—The above two ancient medical authorities also classify plants according to their dietetic value. Charaka classifies them under the following six heads, or *vargas*: *śukadhānya* (cereals), *śamīdhānya* (pulses), *śākavarga* (pot-herbs), *phalavarga* (fruits), *haritavarga* (vegetables, such as *ārdraka, jambīra, palāṇḍu, laśuna*), *āhārayogivarga* (oils), and *ikshuvarga* (sugarcane group).

Suśruta's classification is more elaborate and systematic. His fifteen *vargas* are: *śālidhānya, shashṭhika, vrīhidhānya, kudhānya*—all cereals of different classes; *vaidala* (pulses), *tila* (sesamum), *yava* (barley), *śimba* (bean and its varieties), *phalavarga* (fruits), *śāka* (pot-herbs), *pushpa* (flower), *udbhida* (mushroom), *kanda* (bulb and other subterranean bulbous plants), *taila* (oils), *ikshu* (sugarcane—more than thirteen varieties or different species of sugarcane are described. See also *Bhāvaprakāśa*).

VI. PLANTS AND EVOLUTION

Hindu thinkers believed plants to be animate beings placed in the lowest rung of the ladder of evolution. The following verse from the *Taittirīya Upanishad* (II. 1) distinctly shows that the idea of evolution was a familiar one: "From this Ātman the ether was produced; from the ether air; from the air fire; from the fire water; from the water earth; from the earth plants; from the plants man." The idea of gradual evolution of living beings on earth was known to the Indians long before its conception in the West. We get a correct idea of evolution from the *Vishṇu Purāṇa*.

It will be interesting to quote a relevant dialogue of Buddha regarding the evolution of the earth: "All is then water and enveloped in darkness, a darkness that blinds. Those beings, falling from radiant

worlds, are reborn within the formed universe, made of consciousness, sustained by joy, floating in space and shining in glory. The formed universe, the juicy earth, emerges from the waters like a scum of milk or ghee, odorous and sweet. Having come in contact with it, featuring thereon, those beings become solidified, and lose thereby part of their luminance. Thus the sun, the moon, the stars and the planets appear once more, and the natural seasons come into existence. Meanwhile the cooling process goes on. As the juicy earth gradually becomes hardened, it loses its flavour and sweet taste, but *vegetation first of low, then of higher grade evolves.*"

VII. HEREDITY

The problem of heredity too occupied the thought of our forefathers. Charaka, and earlier still the Brāhmaṇas, raised the question, "how specific characters are transmitted—why the offspring is of the same species as the parental organism, say, human or bovine" (Śaṅkara, *Bṛihadāraṇyaka Bhāshya*).

Charaka and Suśruta, following Dhanvantari, hold that "all the organs are potentially present at the same time in the fertilized ovum and unfold in a certain order. As the sprouting bamboo seed contains in miniature the entire structure of the bamboo, as the mango blossom contains the stone, pulp and fibres, which appear separated and distinct in the ripe fruit, but through their excessive minuteness are undistinguishable in the blossom, even such is the case with man."

Charaka further assumes that "the sperm cells of the male parent contain minute elements derived from each of its organs and tissues." Thus he anticipated Darwin's 'gemmules,' and Spencer's 'ids.' Śaṅkara's conception is almost identical. He says: "The sperm cell represents in miniature every organ of the parent organism and contains *in potentia* the whole organism developed out of it" (Seal). This he further explains by an analogy thus: "The physician should know that like fat (*sarpis*) in the milk, or sugar in the expressed juice of sugarcane, (the seat of semen) is co-extensive with the whole organism of a man (or animal)."[1]

VIII. PLANT PATHOLOGY

In this branch also the Indian botanists made contributions, and the treatment of plants in health and disease as a subject came to be

[1] For a detailed account Dr. Seal's *Positive Science*, or the present writer's *Vanaspati* may be consulted.

regularly studied as early as the time of the *Atharva-Veda* (VI. 50) in which a reference is made to the destruction of corns by pestiferous insects etc. Sāyaṇa's commentary on this hymn gives a long list of such pests. But the definite mention of 'blight' and 'mildew' we get in the *Vinaya Texts* (C.X.1.6). The next reference of importance is found in the *Śukranīti* where grains are mentioned which might be attacked with poisons, fire, snows, or eaten by worms, insects, etc. The *Arthaśāstra*, *Agni Purāṇa* and *Bṛihat Saṁhitā* have each a chapter on *Vṛikshāyurveda*. In the last named book etiology, diagnosis and treatment of plants in diseases are given. Bhaṭṭotpala, a commentator, quotes another authority, Kāśyapa, who also gives a prescription for diagnosing plant diseases. Amongst the remedies suggested, the removal of parts affected, and measures to be taken against fresh infection through the wound etc., are mentioned. Our plant doctors even regarded barrenness of plants as a disease and prescribed remedies for its cure. A whole section is devoted to this topic in *Upavana-vinoda*, a chapter on Arbori-Horticulture in ancient India, in the *Śārṅgadhara Paddhati*.

IX. BOTANICAL MARVELS

Even the possibilities of creating new and marvellous species have been mentioned by the authors of *Bṛihat Saṁhitā* and *Śārṅgadhara Paddhati*. Like Luther Burbank of the modern world our ancestors of old tried, perhaps successfully, to transform scentless flowers into very fragrant ones, but their special treatment of cotton plants to produce fibres as red as burning fire, as yellow as the feather of a *śuka* bird and as blue as the sky, was a great achievement, and it is well known that India is the native home of cotton industry and excelled in cotton manufacture even as early as in the age of Mohenjo-daro. Finally, the study of plant life with reference to its environment was so very intensive that plants were used as indicators in ascertaining the price of things, in economic prediction and as a means of ascertaining the presence of water in a waterless region. Elaborate chapters are devoted to this topic in the above two books.

B. BOTANY AND ALLIED SCIENCES

The thoroughness and perfection of the study of the science of plants in ancient India will be evident from the number of sciences that

developed out of it. Among these we must include the sciences of Medicine, Agriculture, Arbori-Horticulture and Sylviculture. The perfection reached by the ancients in the science of Medicine at the dawn of human civilization is well known. The science of Agriculture, whose beginning can be traced to the Mohenjo-daro period, also reached a mature state of development in the Ṛig-Vedic times and it is still continuing. There is a book extant called *Kṛishi-Saṁgraha*, bearing on the subject of Agriculture, and there are the sayings of one mythical Khanā, which are full of practical suggestions that are found useful even to-day. Rotation of crops was practised even in the Vedic age and the knowledge of it spread to the West from India. The sciences of Arbori-Horticulture and Sylviculture were well developed in ancient India. All decent houses (Vātsyāyana's *Kāmasūtra*) and palaces of kings had pleasure and kitchen gardens attached to them. Public parks and pleasure gardens were provided by the Government (*Arthaśāstra*, *Śukranīti*, etc.), and there were forest departments which were placed under expert forest officers whose duty it was to develop new plantation, administer forest laws and in every way accomplish the economic development of the forest resources of the State.

It is a matter of pride that our ancestors studied plants as plants and anticipated the moderns in some of the fundamental discoveries of botanical science, the study of which, in fact, began in Europe only in the sixteenth century. It is a pity that this science instead of making further progress suddenly got a set-back. A darkness extending well over a millennium followed. The light begins to appear again towards the middle of the sixteenth century with the advent of European scholars in India.

C. FROM 600 A.D. TO 1563 A.D.

During this period some medical treatises were composed in which the knowledge of systematic Botany was further advanced and the plants were more systematically classifed from the medicinal point of view. But there is at least one outstanding publication in this period, and that by Śārṅgadhara, who was a courtier of King Hammira (1283-1301). Of this an interesting chapter, the *Upavana-vinoda*, treating of Arbori-Horticulture deals with plants almost in all their aspects. Some of the topics are: classification of plants, selection of seeds, their sowing, the process of planting, watering of plants after that, protection and treatment of plants in health and disease, nourishment, recipe for a

nourishing solution, methods of propagation of plants, etc., etc. This chapter has been edited, translated and published by the present writer.

D. REVIVAL OF THE STUDY OF BOTANY

I. THE FIRST PERIOD, 1563-1848 A.D.

Systematic Botany—The Portuguese were the first Europeans to come to India and also the first to begin the study of Indian plants. The first book published was Garcia d'Orta's *Coloquios Dos Simples E Drogas Da India* in 1563. It contains descriptions of a large number of plants used as drugs. The edition in possession of the writer is in two volumes containing about 450 pages. The next contribution, *Tractado de las Drogas*, similar in nature, is by another Portuguese, named C. Acosta and was made in 1578.

The first contribution of really scientific value was made, so far as available literature shows, by Henry Van Rheede, the Dutch Governor of Malabar, an amateur botanist, whose large collection of Indian plants made about the year 1676, was published between the years 1686-1703, under the title *Hortus Malabarius*, at Amsterdam, in 12 folio volumes with 794 plates, under the editorship of the great systematist Commelyn. The next notable contributions were also made by Dutch botanists, namely, George Everhard Rump (1741-1755)—*The Herbarium Amboinense;* Plukenet (1696-1705); John Burman—*The Saurus Zelanicus* (plants of Ceylon and Peninsular India) in 1737; Hermann's Singhalese collection (published by Linnaeus in 1747 as *Flora Zeylanica*) and Nicholus Burman's *Flora Indica* in 1768.

John Gerard Koenig, a Danish botanist, arrived in India in 1768. To promote the study of Indian Botany Koenig with Heyne, Klein and Rottler formed a society under the title of "The United Brothers" at Tranquebar in the same year, "the chief object of their Union being the promotion of the study of Botany in India." The brotherhood widened and before the close of the eighteenth century Flemming, Hunter, Anderson, Berry, John Roxburgh, Buchanan, and Sir W. Jones became its members. They used to exchange specimens amongst themselves, and send specimens to botanists of established reputation in Europe. In this way many Indian plants came to be described by Retz, Roth, Schrader and others in Europe. One of this brotherhood, Rottler, himself published some of the new species in the *Nova Acta Acad. Nat. Curiosorum* of Berlin. The French were also not lagging

in this respect. "Sonnerat and other botanists of the French Settlement at Pondichery sent out from time to time large collections of plants to Paris, and these were described chiefly by Lamarck and Poiret."

In the year 1787 through the exertions of Lt.-Col. Robert Kyd, Secretary to the Military Board, the Royal Botanic Gardens were founded at Calcutta, and Kyd became its first Superintendent. Though the object of this foundation was commercial, namely, "that by its means, the cultivation of teak and of the Malayan spices might be introduced into a province near one of the Company's chief Indian centres," yet in course of time it became the first recognized centre of botanical activity in India.

Kyd died in 1793, and Roxburgh succeeded him (1793-1814). He has been described as 'the Indian Linnaeus.' His first contribution was under the title, *The Plants of the Coast of Coromandel*, in 1795. His *Flora Indica* is a monumental work in which for the first time in India he drew up a systematic account of the Indian plants. He also left "admirable coloured drawings of 2,533 species of plants indigenous to India." His *Hortus Bengalensis* is a catalogue of plants in cultivation in the Royal Botanic Gardens. After him came Dr. Buchanan in 1814. He made extensive tour in Nepal and other parts, and his Nepalese collections were described in 1825 by Don in his *Prodromus Floræ Nepalensis*. He was succeeded by Nathaniel Wallich (1815-1835). Wallich organized collecting expeditions and his vast collections he took away to London in 1828. These along with the collections of Russel, Klem, Heyne, Rottler, Buchanan-Hamilton and Roxburgh were worked out with the help of such distinguished botanists as De Condelle, Kunth, Lindley, Bentham and others, and a catalogue of the collections was prepared by Wallich himself, known to the botanical world as *Wall. Cat.* During this period the contribution of Robert Wight, chiefly on the Peninsular flora of which a part was published as *Icones Plantarum*, is worth noticing. This latter book contains figures and descriptions of more than 2,000 Indian species. His other publications are (1840-1850) *Spicilegium Nilghirense*, *Prodromus Flora Peninsulae Indicae*—this last in collaboration with Dr. G. A. Walker Arnot, Prof. of Botany in the University of Glasgow. On behalf of the Paris Natural History Museum, Victor Jacquement extensively toured in India (1829-1832) and made collections of plants which were worked out by Cambessedes and Decaisne.

The contributions to Indian Botany by Griffith, whose Indian career was only thirteen years, were not only important but varied in their nature too. He went on expeditions to the Assam Valley, part of Burma, Bhotan and Sikkim and penetrated Khorassan, Central India and even Malacca. He himself collected 9,000 species and not only described but worked out their morphology. In the *Linnaean Transactions*, his researches on the ovules of Santalum, Loranthus, Viscum and Cycas were published. He collected and wrote much on mosses, liverworts, marsiliaceæ and lycopods and " he had hundreds of drawings to illustrate his microscopic observations." After his death his MSS. etc., were published in six volumes—one in octavo, four in quarto, and one, a monograph on palms, in folio. Next to Griffith might be named William Jack whose labours were published in his *Malayan Miscellanies* and his spared collections are now to be seen in the Herbarium De Lessert in Geneva. Between 1842-1847 Thomas Thomson collected the flora of the N.-W. Punjab and during 1847-1849 that of N.-W. Himalayas and Tibet. His collections were transferred to Kew and incorporated in the preparation of the *Flora Indica* and *Flora of British India*.

In 1820, a second centre of botanical enterprise was established at Saharanpur. Here worked Drs. George Govan (1820), Forbes Royle (1823), Hugh Falconer (1832) and W. Jameson (1842). Royle (1839) published his *Illustration of the Botany of the Himalayan Mountains*, and Falconer *Exploration and Classifications of Tertiary Fossils of the Sewalik Range*, and Jameson is particularly noted for the introduction of China tea plant into British India.

We cannot conclude this period without mentioning the excellent work on Botany done by Graham, Law, Nimmo, Gibson, Stocks and Dalzell in western India; their contributions are generally confined to the flora of the Bombay Presidency between 1839-1861. Another batch of workers, Hardwicke, Madden, Munro and others, explored northern India and published botanical papers; a third batch, Jenkins, Masters, Oldham and others, collected extensively in Assam, and between 1848 and 1850 Strachey and Winterbottom made valuable collections over the higher ranges of Kumaon and Garhwal and in the adjacent Tibet. In 1845 Voigt published his *Hortus Calcuttensis*.

II. THE SECOND PERIOD, 1848-1914 A.D.

This period is interesting in more ways than one. Sir Joseph Hooker arrived in India in 1848, and explored Sikkim and Khasia Hills

with his friend Dr. Thomas Thomson. He discovered the magnificent species of Rhododendron and wrote a superbly illustrated monograph on it. His monumental work is *Flora of British India* in seven volumes, published between the years 1872-1897, with the assistance of Clarke, Baker, Thiselton Dyer, Bennet, Anderson, Hiern, Lawson, Gamble and others. Clarke independently published several papers on Indian botanical subjects in the journals of the Linnaean and other societies. His monographs on Indian Compositæ and Cyrtandracæ are excellent. India will gratefully remember the name of Dr. Thomas Anderson for his labours to establish the cultivation in British India of the Quinine yielding species of Cinchona. Sulpiz Kurz published in two volumes *The Forest Flora of Burma* in 1877, besides contributing many excellent papers to the *Journal of the Asiatic Society* of Bengal. His other collaborators were Burness, Eyre, Mason, Henry Collett and others. Dr. Aitchieson's *List of Punjab Plants* was published in 1867.

The Indian Forest Department was in the meantime established. Dr. Lindsay Stewart, Colonel Beddome, Sir D. Brandis, and Messrs. Talbot and Gamble made important contributions to the study of systematic Botany of India. Stewart published in 1869 his *Punjab Plants*, Brandis in 1874 his excellent book, *Forest Flora of the North-West Provinces of India*, Beddome between 1869-1873 his *Flora Sylvatica of the Madras Presidency* among others. Beddome's *Ferns of Southern India* (1863) and *Ferns of British India* (1865-1870) are two outstanding contributions. Other contributions on fern flora of India are by Griffith, Clarke and Hope. Talbot published *A List of Trees, Shrubs and Woody Climbers of the Bombay Presidency*, but Gamble's contributions are varied and classic, such as his *Systematic Account of the Indian Bambusa*, and his *Manual of Indian Timbers*. Among the other forest officers of note we find for the first time an Indian, Mr. Upendralal Kanjilal, who made some contributions. His *Flora of Assam*, which he could not complete, has now been completed by his son, Mr. P. C. Kanjilal.

In the Madras Presidency, botanical work during this period was carried on by Norton, Perrottet, Metz, and others. By the efforts of Bidie and Lawson a second public Herbarium was established in Madras. Dr. Theodore Cooke, Mr. Marshall Woodrow, Mr. Ranade (Indian) and Dr. Lisbon started the public Herbarium at Poona. J. F. Duthie (1871), King (1871), Prain (1897) and Gage (1913) made noteworthy contributions. Of these Duthie's *Upper Gangetic Flora*, and Prain's

Bengal Plants and *Flora of 24-Parganas and Sunderbans* are excellent works.

The Botanical Survey was established about 1890, and its Records and the *Annals of the Royal Botanic Gardens* began to be published, and monographs of important families, or genera of Indian plants are being published in them.

Economic Botany—We have seen that the Royal Botanic Gardens were established chiefly on economic grounds. Royle, Falconer and Jameson were responsible for the successful introduction of excellent apples and many European vegetables. Much work has been done for the improvement of fibre-yielding and other plants of economic importance. But the most noteworthy enterprises of the century in which botanists took the leading part, were the cultivation of tea, introduction of cinchona, rubber cultivation, and the development of the forest resources of India by the establishment of the Forest Department. In 1883 Government founded the 'Department for Dealing with the Economic Products of the Indian Empire,' and Dr. George Watt was appointed its first Reporter. His monumental work, *The Dictionary of Economic Products*, is still unsurpassed as regards information and detail, and the economic section of the Indian Museum bears eloquent testimony to his magnificent researches and ideas.

Though the Forest Department was established in the Bombay Presidency in 1807, it began to work regularly from 1847 with Dr. Gibson as its first head. He was a botanist. In the Madras Presidency the Department was established in 1843, in Mysore in 1847, and in Coimbatore and Cochin in 1848. In 1856 Mr. Brandis was appointed in Burma. In 1842 and 1847 Codes of Forest Laws were drawn up and a few years after (1856) Sir Dietrich Brandis was appointed Inspector-General of all the Government Forests in British India, and he organized the Indian Forest Department with two Schools of Forestry —one at Cooper's Hill and the other at Dehra-Dun. At both these places Botany was taught to its officers. And the contributions made by some of its past officers, such as Gibson, Dalzell, Cleghorn, Anderson, Stewart, Brandis and Gamble are valuable.

Cryptogamic Botany—Apart from the Systematic Botany very little was done for the study of Cryptogamic Botany during this period. Besides Griffith, whose contributions on the subject we have already noticed, we may mention Dr. Arthur Barclay who worked on 'Uredininous Fungi,' and Dr. D. Cunningham who worked on bacteria. Some

of Cunningham's researches were published in the *Transactions of the Linnaean Society*. He also contributed papers on Nyctitropism and the mode of fertilization in Ficus Roxburghii. Mitten (1859) elaborated a Moss Flora of India and Berkeley and Browne prepared an account of the Fungi of Ceylon. Dr. George Wallich also worked on Indian Desmids.

Palæobotany—The great French palæobotanist Brongniart (1828) was the first to describe a few Indian fossil plants. The next contribution was made by Royle in 1839 in his *Illustrations of the Botany of the Himalayan Mountains* (see *ante*). In his *The Glossopteris Flora* Dr. E. A. N. Arber (1905) described a few types from the Indian Lower Gondwana plants. But a systematic flora of the Gondwana system, Upper and Lower, was worked out and published by Oldham, Morris and the great Dr. Ottokar Feistmantel (1863-1886). The next contributions of note are from Noetling (1893), Zeller (1902), Holland (1903, 1909), Middlemiss (1909-1911), Seward (1905-1912) and Sahni (1920-1933). The Geological Survey was founded in the middle of the nineteenth century and ever since valuable works are being published in the reports and the records and memoirs of this Survey.

Sir William Jones, one of the United Brothers, regarded Botany as "the loveliest in the sciences of Nature" and founded the Asiatic Society of Bengal in 1784. The *Journal of the Asiatic Society* for more than a century, and the *Journal of the Bombay Natural History Society* since the beginning of the present century have been the only organs in India in which papers on Indian Botany were published.

Though some of the provincial universities were founded in the last century, no actual and earnest attempt at botanical studies by the Indians were forthcoming till the first or second decade of the present century. The foundation of the Medical College in 1835 marked the beginning of the study of Botany in Bengal, if not in the whole of India. Dr. Jadugopal Mukherjee was the first Indian to write a book on Botany, the *Udbhid-Vichār*, in vernacular, in 1869, and the next attempt was made by George Watt, and his *First Step in Botany* in Bengali was published in 1876. A great movement for the introduction of higher scientific education amongst the Indians was started by some philanthropic Europeans and great Indians like Raja Ram Mohan Roy and Dr. Mahendra Lal Sarkar. Dr. Sarkar in the August number of his *Calcutta Journal of Medicine*, 1869, wrote an article "On the Desirability of a National Institution for the Cultivation of the Sciences by the Natives

of India." His idea was supported by the now defunct *Englishman* (29th Dec. 1869) and *The Hindoo Patriot* (13th Dec. 1869). "The Indian Association for the Cultivation of Science," though contemplated in 1870, was finally founded in 1876. This may be regarded as the beginning of the study of Western sciences in India by the Indians in right earnest. Among other subjects, Botany was taught for many years to come in the laboratories of this Association. "The Indian Association for the Advancement of Industrial and Scientific Studies" was founded in the beginning of this century. Students of both sexes also began to flock to the West in large number for higher studies in science and within a decade or two we find many of them coming back with highest academic distinctions from great centres of learning.

From 1563 to 1911 about 1510 original papers were published on Indian Botany, general and regional; and out of these about 34 papers were by the Indians. Their names are worth mentioning here: N. N. Banerjee (1883-1896), K. B. Bose (1905), U. C. Datta (1877), K. L. Dey (1893), A. Ghosh (1902), B. S. Gupta, S. M. Hadi (1902), I. Jaykrishna (1899), K. R. Kirtikar (1901), L. B. Kulkarni, J. Mukherjee (1869), N. Mukherjee (1907), T. N. Mukherjee (1883), K. M. Nandkarni (1908) and J. B. Singh (1869).

III. THE MODERN PERIOD

There are now 18 universities in India and the European teachers of Botany have been mostly replaced by efficient Indians of repute, and important research centres have sprung up throughout the Indian Empire. A large number of original papers are annually being contributed to various journals of Europe and America.

The Indian Science Congress was founded in 1914. From the comparative table given below, it will be seen that a large number of original papers on all branches of Botany are annually contributed to its Botanical Section, and they are, since 1927, almost wholly by the Indians; even the sectional meetings are being now presided over by the Indians of world-wide fame.

The Indian Botanical Society was established in 1920, "with the object of promoting the study of Botany in India and of bringing into touch botanical workers scattered over a large country." It has a journal of its own. The number of members has risen to 145 (1933) of whom 7 are honorary and 6 life members (all Indians), 84 full members of whom only 11 are Europeans, and 4 women, and 44 associate members.

The Bose Research Institute was founded in 1917 and its activities are published annually in its Transactions. To this Institute came scholars like Professor Molisch to learn the methods employed by Sir J. C. Bose in the study of the Physiology of plants.

We have gone over the story of the beginning, development, long eclipse, and renaissance of the study of Botany in India. We have seen how our ancestors began this study in right earnest and developed it into an almost perfect science. Through circumstances of which we have no full knowledge an eclipse of over one thousand years followed during which Botany along with other sciences was non-existent. We have shown how towards the middle of the sixteenth century light came from the West and darkness began to disappear, thanks to the pioneers from the West. It was they who promoted the scientific study of Botany in India, and had worthy disciples in the Indians who in their turn are doing excellent work in all the branches of the science. It is not possible in the course of this brief article to give a full and detailed notice of their work.

TABLE A

Original papers contributed to the Botanical Section of the Indian Science Congress since 1914

Year	Total no. of papers	By Indians	By Europeans	Jointly.
1914	2	1	1	...
1915	6	2	2	2
1916	9	3	6	...
1917	16	6	7	3
1918	25	11	14	...
1919	11	5	5	1
1920	10	7	3	...
1921	21	18	2	1
1922	25	19	6	...
1923	46	29	15	2
1924	34	31	2	1
1925	56	55	1	...
1926	55	45	10	...
1927	50	50	...	...
1928	47	47	...	...

Year	Total no. of papers	By Indians	By Europeans	Jointly.
1929	80	77	1	2
1930	95	95	...	...
1931	101	101	...	...
1932	128	128	...	...
1933	80	80	...	...
1934	104	99	5	...

TABLE B[1]

List of Indians and Europeans who have advanced the knowledge of Indian Botany during 1914-1935

1. Systematic Botany:
   Phanerogam—Brühl, Blatter, Banerji (S.C.), Dudgeon, Kirtikar and Bose, Fyson, Sen Gupta (S.R.).
   Moss—Brühl, Gupta.
   Liverworts—Kasyap.
   Algæ—Allen, Biswas, Brühl, Bharadwaj, Iyengar, Ghosh, Bœrgesen, Kundu, Banerjee (J.).
   Fungi—Butler, Bose, Brühl and Sen Gupta, Mahju, Banerjee (S.)
   Lichen—Choudhury, Smith.
2. Anatomy—Maheswari, Mullan, Ghosh (E.).
3. Plant Pathology—Butler, Bagchee, Choudhuri, Dastur, Mehta, Ajrekar.
4. Physiology and Ecology—Bose (J.C.), Inamdar, Dastur, Parija, Malhotra, Ekambaram, Mukherjee, Sing, Sen Gupta (J.).
5. Cytology—Banerjee (I.), Maheswari, Bhaduri, (Mrs.) Datta, Datta (R.M.), (Miss) J. Ammal, Johri, Majumdar.
6. Palæobotany—Sahni, Seward.
7. Plant-breeding and Genetics—Howard, Hector, Mitra.

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[1] The list should not be taken as complete. The names of those who worked in foreign countries and whose papers have been published in foreign journals and also the names of numerous young and brilliant workers have been omitted.

2. Bose, P. N.—The Centenary Review, Asiatic Society, Bengal, 1885.
3. Choudhuri, H.—Presidential Address, Sec. Botany, Ind. Sc. Congress, 1932.
4. King, G.—Presidential Address, Sec. K, British Association, Dover, 1899.
5. Majumdar, G. P.—Vanaspati, Calcutta, 1927.
6. Sahni, B.—Presidential Address, Sec. Botany, Ind. Sc. Congress, 1922.

INDIA'S CONTRIBUTION TO CHEMICAL KNOWLEDGE

VEDIC PERIOD

In India as in other countries, Chemistry has developed mainly as a handmaid to medicine. It is interesting to note that in the *Ṛig-Veda* the gods are almost entirely supposed to be impersonations of natural phenomena or agencies like fire, wind, sun, dawn, etc., and the herbs and plants have also been deified.

In the *Atharva-Veda* plants and herbs have been looked upon as useful materials in the treatment of diseases. Even in the Vedic age, though there was no caste system in a rigid form, the medical profession was more or less hereditary and hence medical practice developed remarkably well, although the position of the votaries of medical science was comparatively inferior. On the other hand, these people had a profound hold upon the laymen as well as on the kings because of their splendid services in causing injury to and defeat of enemies. The term " Āyushyāṇi " (the securing of long life and health) which occurs in the hymns of the *Atharva-Veda*, was converted later on to " Rasāyana " which is practically the equivalent of alchemy. Even in the *Atharva-Veda* gold is regarded as the elixir of life and lead as the dispeller of sorcery, and thus it can be said to be the first book of knowledge of medicine and alchemy in ancient India.

ĀYURVEDIC PERIOD

In the Āyurvedic period, the Hindu system of medicine was more or less systematized, as is evident from the two standard books, the *Charaka Saṁhitā* and the *Suśruta Saṁhitā*, which seem to have been written almost a thousand years after the *Atharva-Veda*, and the *Charaka* at an earlier period than the *Suśruta*. It seems well established that the *Charaka Saṁhitā* must have been written in the pre-Buddhist era and it deals with the diagnosis, prognosis and classification of diseases. Humoral pathology has also been developed in it. Sir P. C. Ray in his *History of Hindu Chemistry*, Vol. I, has made the following significant statement: " On reading the *Charaka*, one often feels as if it embodied the deliberations of an international Congress of medical experts held in the Himalayan regions.......The work professes to be more or less of the nature of a record of the proceedings of such a Congress." The French

scholar P. Cordier also gave out the same view regarding the *Charaka Saṁhitā*. The *Suśruta Saṁhitā* is more systematic and scientific than the *Charaka*, as it is of more modern origin and is supposed to be re-written by the celebrated Buddhist scientist and philosopher Nāgārjuna, certainly the greatest name in the early Hindu Medicine and Chemistry. The subject matter of the *Charaka Saṁhitā* is mainly medicine, whilst that of the *Suśruta* is surgery. It appears that from an early period the Hindus learnt the manipulation of the lancet and other simple surgical instruments and handled them with skill.

In this connection the following observations of Sir P. C. Ray are of interest: "It is therefore evident that almost before the birth of Hippocrates the Hindus have elaborated a system of medicine based upon the humoral pathology." "After all, we are afraid, too much has been made of the resemblance between the Greek and the Hindu theory and practice of medicine. The analogy is more superficial than real and does not seem to bear a close examination. The Hindu system is based upon the three humours, namely, the air, the bile and the phlegm, whilst that of the Greek is founded upon four humours, namely, the blood, the bile, the water and the phlegm—a cardinal point of difference."

It is a significant fact that the works of Charaka and Suśruta and that of Vāgbhaṭa, which may be looked upon as an epitome of the other two, deal with metallic preparations in the treatment of diseases and this is a great achievement of Hindu medicine at an early stage. These treatises on medicine and surgery lay great stress on abstinence and fasting as aids in the treatment of disease.

BUDDHIST PERIOD

Very great improvement in medicine and surgery took place during the Buddhist period in India, because the religion of Buddha insists on the alleviation of suffering as an important item of Buddhistic faith, and hence hospitals for the treatment of men and beasts alike were built in almost all the monasteries (universities) of Buddhistic India. Inscriptions engraved on rocks, pillars, etc., describe prescriptions for the treatment of diseases.

ALBERUNI'S EVIDENCE

A flood of light on the exact state of scientific and medical knowledge prevalent in India about the ninth or tenth century A.D. is available from

the book on India written by the great Muslim scholar Alberuni, who lived in India from 1017 to 1030 A.D. and mastered Sanskrit and Hindu Mathematics and Philosophy in the original. This versatile Muslim scholar has left the following account as a true perspective of the chemical knowledge in India about the eleventh century A.D.: "I only heard them (Hindus) speaking of the processes of sublimation, of calcination, of analysis and of the waxing of talc."

"They have a science similar to alchemy which is quite peculiar to them. They call it Rasāyana......It means an art which is restricted to certain operations, drugs and compounds and medicines, most of which are taken from plants. Its principles restored the health of those who were ill beyond hope and gave back youth to fading old age." A translation of Charaka's book occupied a place in the library of this cultured Arab.

Professor Sachau, who translated and edited Alberuni's India, states as follows:

"What India has contributed reached Bagdad by two different roads.........Another influx of Hindu learning took place under Haroon (A.D. 786-808). Induced probably by family traditions, they sent scholars to India, there to study medicine and pharmacology. Besides, they engaged Hindu scholars to come to Bagdad, made them the chief physicians of their hospitals and ordered them to translate from Sanskrit into Arabic, books on medicine, pharmacology, toxicology, philosophy, astrology and other subjects. Still in later centuries, Muslim scholars sometimes travelled for the same purposes."

The following quotation from Professor Macdonell's book on the history of Sanskrit literature will generally corroborate the observations of Professor Sachau: "In science, too, the debt of Europe to India has been considerable. There is, in the first place, the great fact that the Indians invented numerical figures, used all over the world. The influence which the decimal system of reckoning, dependent on those figures, has had, not only on Mathematics but also on the progress of civilization in general, can hardly be overestimated. During the eighth and ninth centuries the Indians became the teachers in Arithmetic and Algebra of the Arabs and through them, of the nations of the West. Thus, though we call the latter science by an Arabic name, it is a gift we owe to India."

One of the greatest achievements of Hindu Medicine is the introduction of metallic preparations, specially those of mercury and iron, in

medicine much earlier than in the West. The great Buddhist scientist Nāgārjuna who flourished in the eighth or ninth century A.D. (an earlier date is also possible) was the first to use the mercury preparation *kajjali* (black sulphide of mercury) in medicine.

The following statement of Alberuni bears out that the great Buddhist seer Nāgārjuna, who is credited with the discovery of the processes of distillation and calcination, must have lived in the eighth or the ninth century A.D.

"A famous representative of this art (alchemy) was Nāgārjuna, a native of the fort Daihek near Somanath. He excelled in it and composed a book which contains the substance of the whole literature on this subject and is very rare. He lived nearly a hundred years before our time."

Hiuen Tsang who stayed in India from 629 A.D. onwards makes the following remarks regarding Nāgārjuna: "Nāgārjuna Bodhisattva was well practised in the art of compounding medicine; by taking a preparation (pill or cake) he nourished the years of life for many hundreds of years, so that neither the mind nor appearance decayed."

It seems, therefore, that Nāgārjuna very likely lived in the seventh century A.D. or even earlier.

Patañjali, the commentator on the grammar of Pāṇini, was also an alchemist of repute. He seems to have flourished in the second century B.C. and was an authority on the science of iron (*loha-śāstra*).

In Europe, Philippus Aureolus Paracelsus Theophrastus Bombastus von Hohenheim (1493-1541), popularly known as Paracelsus, is credited with the use of mercury preparations internally as medicine. It is now well known that he travelled extensively in the East and might have obtained the information that mercury preparations were in use internally in the Oriental countries. Similarly, Basil Valentine who flourished about the sixteenth century seems to have used antimony preparations. Roger Bacon who died in 1294 A.D. asserted that the philosopher's stone was able to transfer a million times its weight of base metal into gold and the same substance was regarded as a universal medicine and believed to prolong life up to 400 years or more, just as mercurous preparations were regarded in India as the panacea for all diseases. In this connection the following remarks of Schorlemmer will be of interest: "Up to the sixteenth century almost the sole object of chemical research had been to find the philosopher's stone. But now chemistry began to develop itself to new and different paths, opened by

two distinguished men—Agricola, the father of metallurgy, and Paracelsus, the founder of Iatro-chemistry or medical chemistry. Both contributed chiefly to the development of Inorganic Chemistry. In opposition to the school of Galen and Avicenna, Paracelsus and his followers chiefly employed metallic preparations as medicines." Paracelsus was doubtful as regards the exact nature of zinc. Libavius (died in 1616) who "stood up manfully" against the excesses of Paracelsus and vigorously combated the defects in his doctrines and the employment of secret remedies, also believed in the transmutation of metals. It is well known that even as late as 1566 the French Parliament and the Faculty of Medicine, Paris, condemned the innovations of Paracelsus in which mercury preparations were used internally.

It appears, therefore, that in Europe even as late as the sixteenth century, the medical men were doubtful about the efficacy of the internal use of mercury and other metallic preparations, whilst the Hindu physicians established firmly their potency as early as the sixth or seventh century. That the Hindu physicians successfully used such powerful drugs as arsenic, iron and mercury as internal medicine much earlier than their use in Europe, although the Muslim hakims under the royal patronage did not utilize them, will be evident from the following quotations from *Taleef Shareef* and Ainslie's *Lepra Arabum*:

"*Soomboolkhār*, the white oxide of arsenic: There are six kinds of this; one is named Sunkia, the third Godanta, the fourth Darma, the fifth Huldea. The Yunani physicians do not allow this to form a part of their prescriptions, as they believe it destroys the vital principle. The physicians of India, on the contrary, find these drugs more effectual in many disorders than others of less power, such as the calx of metals. For this reason too I am in the habit of seldom giving these remedies internally, but I usually confine my use of them to external application and as aphrodisiacs which I prescribe to a few friends who may have derived no benefit from Yunani prescriptions. It is better to use as few of them as possible."

"*Pārā*, mercury: It is very generally used throughout India in many ways, both in its native and prepared state, but in the latter we ought to be very cautious, for it is seldom sufficiently killed or removed from its native state, in which it is a dangerous drug."

"*Loha*, iron: It is commonly used by physicians in India, but my advice is to have as little to do with it as possible."

Ainslie states as follows in his *Lepra Arabum*: "It is well known that the Eastern nations were the first who employed mercury in the cure of obstinate cutaneous and leprous affections; and it may be questioned whether the natives of India were before the Arabians or only second in order in availing themselves of the virtues of that powerful mineral. Rhases, Mesu and Avicenna all notice it, and according to Fallopius, as we find observed by Le Clerc in his *Histoire de la Medicine*, pp. 771-791, it was the opinion of those writers which first suggested its use in venereal diseases."

It appears, therefore, from the foregoing pages that the Hindus were the first to make a speciality in the internal use of mecurial remedies in medicine and also they were the first to introduce the metallic preparations of iron and arsenic as internal medicine. Not only the earlier medical books like the *Charaka* and *Suśruta Saṁhitās*, but the later Tantras have eulogized the efficacy of metallic preparations in internal medicine.

PREPARATION AND STORING OF ALKALI

Suśruta has discussed the preparation and use of alkalies and alkaline caustics in an eminently satisfactory manner. After describing the various uses of caustic alkali in surgery and medicine, the conversion of the ordinary alkali to caustic alkali by the addition of lime obtained from the burning of limestone, conch and other shells is precisely narrated. The storing of caustic alkali in iron vessels, which is the modern procedure, has been described in the following words: "When reduced to proper consistence, the solution should be removed from the fire and poured into an iron jar. The opening or mouth of the jar should be covered and it should be kept in a secluded place. This preparation is called 'Madhyama Kshāra' or alkaline caustic of middling strength. When the alkaline water is simply boiled to proper consistence without the addition of burnt shells etc., the preparation is called 'Mṛidu Kshāra' or mild alkaline solution." It seems significant that in India the difference between mild and caustic alkali was recognized and a sound method of converting mild alkali into caustic alkali and their storing was known in the time of Nāgārjuna, may be in the second century A.D. According to M. Berthelot (*Chimie des Anciens*, p. 284) the same process was known in the eleventh century in Europe. It appears, therefore, that in the domain of knowledge regarding the preparation and use of alkalis, the Hindu chemists were much in advance of their European *confrères*.

EQUIPMENT OF A CHEMICAL LABORATORY

As early as the twelfth century A.D. the Hindus had devised quite a large number of apparatus, instruments (*yantras*), etc., in chemical technology, as, for example, *dola yantram* (for extracting by suspending the substance in steam), *svedanī yantram* (for steaming), *pātana yantram* (for sublimation and distillation), *vālukā yantram* (sand bath), *tiryak-pātana yantram* (for distillation per descensum), *vidyādhara yantram* (for extracting mercury from cinnabar) and a host of other arrangements.

Regarding the location and equipment of the laboratory and the persons who should work therein, the following is of interest: "The laboratory is to be erected in a region which abounds in medicinal herbs and wells...It is to be furnished with various apparatus, instruments, etc. The phallus of mercury is to be placed in the east, furnaces to be arranged in the south-east, washing operations in the west and drying in the north-west. The koshṭi apparatus for the extraction of essences, the water vessels, a pair of bellows and various other instruments are also to be collected as also the threshing and pounding mortars, the pestles, sieves of various degrees of fineness, earth for the crucibles, charcoal, dried cowdung cakes, retorts made of glass, earth, iron and conch shells, iron pans, etc. Those who are truthful, free from temptations, given to the worship of *devas* and Brāhmaṇas, self-controlled and used to live upon proper diet and regimen, such are to be engaged in performing chemical operations. Such herbalists as are not deceitful and are well versed in the knowledge of the drugs and plants and in the language of many countries should be employed."

The Hindus were quite good in their knowledge of metals and their extraction from naturally occurring ores. Gold and silver ornaments were in use in the Vedic period. In ancient India, the soldiers used to put on coats of mail and metallic helmets. Iron, lead, and tin are mentioned in the *Yajur-Veda*. The following lines from the *Chhāndogya Upanishad* (IV. xvii. 8) show that the Hindus had fairly clear notions about the formation of alloys: "As one binds gold by means of *lavaṇa* (borax), silver by means of gold, tin by means of silver, lead by means of tin, and iron by means of lead." The following lines from the Greek writer Megasthenes who declared that the Indians were skilled in the arts are of considerable interest: "...Underground numerous veins of all sorts of metals, for they contain much gold and silver, and copper and iron in no small quantity and even tin and other metals, which are employed

in making articles of use and ornaments, as well as the implements and accoutrements of war."

EXPERT KNOWLEDGE IN METALLURGY

It has now been recognized by everybody that the Hindus were experts in preparing high class steel. The preparation of the well-known and highly estimated Damascus blades filtered from India to Persia through the Arabs.

The Kutub pillar (iron pillar 24 ft. long and 6½ tons in weight) of Delhi which is over 1500 years old is a source of great admiration to everybody. The great French scientist H. Le Chatelier in his University lectures at the Sorbonne always spoke highly about the wonderful quality of steel manufactured in India. The following lines from Fergusson are of great interest in this connection:

"It has not, however, been yet correctly ascertained what its age really is. There is an inscription upon it, but without a date. From the form of its alphabet, Prinsep ascribed it to the third or fourth century; Bhau Daji, on the same evidence, to the end of the fifth or beginning of the sixth century. The truth probably lies between the two. Our own conviction is that it belongs to one of the Chandra Rajas of the Gupta dynasty, either subsequently to A.D. 363 or A.D. 400. Taking 400 A.D. as the mean date—and it certainly is not far from the truth—it opens our eyes to an unsuspected state of affairs to find the Hindus at that age capable of forging a bar of iron longer than any that have been forged even in Europe up to a very late date, and not frequently even now.

"It is almost startling to find that, after an exposure to wind and rain for fourteen centuries, it is unrusted, and the capital and inscription are as clear and as sharp now as when put up fourteen centuries ago."

Sir Robert Hadfield, the great English authority on metallurgy, makes the following significant remarks on this topic:

"Indeed it is only within the last century or so that any European iron master could have undertaken to produce such a forging. The only explanation of this wonderful specimen of iron is that it must have been welded together in sections, though there are no signs of it on the pillar itself." The pillar is practically pure iron, as will be evident from the following analysis by Sir Robert Hadfield—

C	Si	S	P	Mn	Fe	Sp. Gr.
0.080	0.046	0.006	0.114	Nil	99.720%	7.81

The huge iron girders at Puri and the ornamental gates of Somnath, and the twenty-four feet iron gun at Narvar are excellent samples of Hindu skill in metallurgy.

Regarding the metallurgy of zinc, Sir P. C. Ray writes in his *History of Hindu Chemistry* as follows:

"The extraction of zinc from the ores can be followed in every detail from the account left to us both in *Rasārṇava* and *Rasaratnasamuchchaya*.

"Rasaka is mentioned in *Rasārṇava* as the mineral which turns copper into gold. We have also in the succeeding couplets a process described for the reduction of the ore. This process is so elaborately given in *Rasaratnasamuchchaya* that it may be quoted almost verbatim in any treatise on modern Chemistry; it is practically the same as the distillation per descensum. The flame of bluish tint issuing from the mouth of the crucible indicates the combustion of carbon monoxide, so often observed in metallurgical operations. *Rasārṇava* (about 1,200 A.D.) describes fairly precisely the coloration of flames when metals and then salts are introduced in them. Copper yields a blue flame; that of tin is pigeon-coloured; that of lead is pale-tinted; that of iron is tawny; that of the 'peacock' ore (sasyaka) is red."

PROBABLE CAUSES OF INTELLECTUAL STAGNATION IN SCIENCE

It is a remarkable phenomenon, but rather difficult to explain satisfactorily, that for a period extending over seven hundred years the progress in Chemistry and Medicine in India was insignificant. It is not easy to find any solid achievement made in India in the domain of Chemistry in the period 1200-1890 A.D. The following seem to be some of the important factors leading to intellectual stagnation in science. It seems well established that the mental and physical capacity of a people depends a good deal on the quality of food taken by them. The present writer is of opinion that if no good quality protein is present in the food, the brain of the people assimilating this food deteriorates. Scientific experiments and observations show that the animal proteins obtainable from milk, egg, fish and meat are really of a better class than those obtained from plants and vegetables, the latter being classed as second class proteins. Moreover, the protein present in rice is certainly of a better quality than that present in wheat, beans, legumes, etc. According

to K. Thomas (*Arch. Physiol.*, 1909, page 216), the nutritive values of the common proteins are as follows:

Milk, meat, fish ...	100	Rice	88
Corn	30	Potato	79
Wheat	40	Peas	56

It seems, therefore, that for the physical and intellectual well-being of a nation, the food must be rich in animal protein, which, however, is more costly than vegetable protein. Owing to the extreme poverty prevailing in India, very few can afford to have the requisite amount of animal proteins in their diet and they have to depend mostly on vegetable protein, mainly dal, gram, etc. The lack of good quality protein in the Indian diet, which is being used for numerous generations has led to a deterioration of brain power and initiative in India. But those people whose staple food is rice containing better quality protein than in other vegetable products seem to be intellectually superior to those depending chiefly on wheat, dal, gram, etc.

It is well known that Science and Medicine developed considerably in the Universities and hospitals attached to the Buddhist monasteries at Pātaliputra, Taxila, Sārnāth, Nālanda, Vikramśilā and Udantapura between the fifth and the eleventh century A.D. According to Kern (*A Manual of Indian Buddhism*), during the invasion of India by the Mohammedans in 1200 A.D. the monasteries at Udantapura and Vikramśilā were destroyed. The monks were either killed or they fled to other parts, e.g. Nepal, South India and Burma, and thus the progress of science practically came to an end from the land of Indian Aryans, as there was no security and settled state of affairs and the people were in constant dread owing to the ravage of repeated invasions.

Moreover, owing to the revival of Brāhmaṇism and overthrow of Buddhism, the neo-Brāhmins in their zeal to show hostility to everything Buddhistic discarded and neglected those things which were cherished and advanced by the Buddhists. Thus practical Science, Medicine and Surgery, etc., which were zealously pursued by the Buddhists seem to have been totally disregarded by the neo-Brāhmins. All these factors led to the decline of Science and Medicine in the period 1200-1900 A.D.

In modern times notable achievements have been made in different branches of Chemistry, but the training of most of the workers of this country during this period has been in the West or on Western lines. Whilst India was in intellectual torpor during the above period, European

nations made gigantic strides in science and its application and became the leaders of scientific achievements. Hence it is but natural that the Indians whose ancestors were pioneers up to the period ending 1200 A.D. had to be taught by the European nations the methods of experimental sciences on modern lines.

CHEMISTRY IN MODERN INDIA

In the eighties of the last century the two Indian pioneers, Sir J. C. Bose and Sir P. C. Ray, made a pilgrimage to Europe to learn scientific methods in the Universities of Cambridge and Edinburgh respectively. They returned to our land and for over forty years they have been initiating and inspiring young men to investigate the mysteries of Nature according to experimental methods. In the last quarter of a century, notable advances have been made in this country and flourishing schools of Chemistry have developed at many centres.

INORGANIC CHEMISTRY

Sir P. C. Ray (Calcutta) like a true Hindu has for a number of years studied the chemistry of mercury compounds and discovered the compound mercurous nitrite by the action of mercury on dilute nitric acid. His pupil N. R. Dhar and his collaborators have established that mercurous nitrite is the first product when mercury acts on dilute nitric acid below 52° and they have also studied the conditions for the formation of this compound. Sir P. C. Ray and his students have carried on important work on the chemistry of different nitrites.

P. B. Sarkar (Calcutta) and his co-workers have obtained interesting compounds of boron and fluorine, and carbon and fluorine and have thrown light on problems of rare earth elements. P. Ray and his pupils have tackled important problems of valency with reference to inorganic complex substances. R. C. Roy working at Patna has thrown considerable light on the absorption of substances by silica gels. The valencies of the elements gold and platinum have formed the subject of a number of important papers by Sir P. C. Ray and his pupils. P. Neogi and his associates and N. R. Dhar and his colleagues have carried on interesting work on the period of induction of several chemical reactions. Important work in inorganic chemistry has been published by Sanjiva Rao at Bangalore.

The veteran chemist Sir P. C. Ray is also a pioneer in chemical industry in India and in his Bengal Chemical and Pharmaceutical Works

different inorganic acids and chemicals and medical preparations are manufactured.

ORGANIC CHEMISTRY

Important advances in synthetic organic chemistry have been achieved by B. B. Dey (Madras), H. K. Sen, R. L. Datta, B. N. Ghosh, P. C. Mitter, J. Bardhan, M. Q. Khuda, P. K. Bose (Calcutta), S. Dutt and his pupil J. D. Tewari (Allahabad), P. S. Varma (Benares), S. M. Sane (Lucknow), J. N. Ray (Lahore), Venkataraman (Lahore), P. C. Guha and G. C. Chakravarti (Bangalore), K. G. Naik (Baroda), S. Guha Sarkar (Dacca), R. D. Desai (Aligarh), Sri Krishna (Dehra-Dun), Moudgil (Travancore), S. N. Chakravarti (Annamalainagar) and several others.

Synthesis of dye stuffs has been carried on by A. C. Sircar, H. K. Sen, R. N. Sen, P. C. Mitter (Calcutta), S. Dutt (Allahabad), B. B. Dey (Madras), S. K. Guha (Patna), P. C. Dutta (Muzaffarpore) and others.

In recent years, the analysis and isolation of active principles of Indian medicinal plants have attracted the attention of several chemists and medical men in this country, viz. Chopra, S. Ghosh (Calcutta), S. Dutt and his pupils N. N. Ghatak, A. C. Roy and J. B. Lal (Allahabad), B. B. Dey (Madras), P. C. Guha (Bangalore), Sri Krishna (Dehra-Dun), S. Siddique (Delhi), J. N. Ray (Lahore), Manjunath (Bangalore) and others.

The chemistry of fibres is being studied by J. K. Chowdhury, P. B. Sarkar and others at Dacca.

Many synthetic organic compounds with important medical applications have been obtained by U. N. Brahmachari and his co-workers and B. N. Ghosh and H. K. Sen (Calcutta).

The subject of optical activity of organic compounds of nitrogen has been studied by B. K. Singh and of inorganic nitrogen compounds by P. Neogi.

GENERAL AND PHYSICAL CHEMISTRY

Two important lines of investigation on which sufficient advances have been made in India are (1) Photochemistry and Kinetics and (2) Colloids and their applications.

Light on the mechanism of photochemical reactions has been thrown by J. C. Ghosh and his pupils K. P. Basu, R. M. Purkayastha and J. N. Mukerji (Dacca). A. N. Kappana, a pupil of J. C. Ghosh, is successfully carrying on investigations in the mechanism of thermal reaction at Nagpur.

For over twenty years, N. R. Dhar and his pupils A. K. Bhattacharya, B. K. Mukerji and W. V. Bhagwat, R. C. Banerji, S. P. Sanyal and others have done important work in different branches of catalysis and photochemistry, throwing considerable light on photochemical reactions and negative and positive catalysis and the influence of temperature on chemical reactions (compare N. R. Dhar's *Chemical Action of Light*, Blackie & Son, London, 1931).

Mata Prasad at Bombay is also investigating photochemical reactions and crystal structure by X-Rays; S. S. Joshi (Benares) has studied the influence of different kinds of discharges on gaseous reactions.

The physical chemistry of solutions has been studied by J. C. Ghosh and his pupils, N. R. Dhar and his colleagues, D. N. Bhattacharya, A. K. Datta, K. P. Chatterji and W. V. Bhagwat. Colloid chemistry is being largely investigated in this country. The problem of electric charge and its origin has been investigated by J. N. Mukerji (Calcutta) and his pupils, S. G. Chaudhuri, S. P. Roy Chaudhury, S. N. Mazumdar and B. Ghosh. N. R. Dhar (Allahabad) and his collaborators N. G. Chatterji, P. B. Ganguli, K. C. Sen, S. Ghosh, A. C. Chatterji, Satya Prakash, Mrs. S. Dhar, D. N. Chakravarti, M. N. Chakravarti, S. N. Banerji and Moolraj Mehrotra have thrown light on the problem of coagulation, hydration and gelation of colloids. They have also thrown considerable light on the phenomenon of periodic precipitation, on the influence of light on colloids and on biochemical aspects of colloid chemistry with special reference to occurrence of diseases and old age and death. The recent work of A. C. Chatterjee on capillary active substances is of great interest.

S. S. Bhatnagar and his pupils Goyle and D. L. Srivastava have carried on important work on emulsions and colloids and their applications. Colloids have also been investigated by B. N. Desai, S. S. Joshi, S. K. Basu, D. N. Ghosh, N. A. Yajnik and his pupils.

K. Krishna Murti (Nagpur) has carried on important work on the scattering of light by colloidal particles.

Many colloidal and vitaminous products are being manufactured in this country, notably by the Indian Drug House, Allahabad, for the treatment of different diseases.

S. S. Bhatnagar and his pupils at Lahore, D. M. Bose and his colleagues at Calcutta, Sir C. V. Raman and his pupils Krishnan and Bhagavantham (Calcutta), Satya Prakash (Allahabad) and others have done important work in the domain of magneto-chemistry.

In the realm of molecular and atomic process, the work of Sir C. V. Raman and his pupil Krishnan on light scattering has made the authors famous; and that of Prof. M. N. Saha on the thermal ionization of elements at high temperatures and its application to Astrophysics has secured an important place in atomic and astral physics. M. N. Saha and his colleagues, S. C. Deb, A. K. Dutta, P. K. Sen Gupta, M. Desai and others have developed and extended the views of J. Franck on light absorption and dissociation of polyatomic molecules in the gaseous state. It is now well known from the researches of Franck and Victor Henri that whenever a molecule is rendered active and unstable, either by increase of temperature or absorption of light, and there is a loosening of the bonds uniting the atoms, an increased light absorption by molecules in this active condition is observed. Recently N. R. Dhar, A. K. Bhattacharya, P. K. Kar, P. N. Bhargava and P. R. Mookerji have shown experimentally with numerous reactions that the light absorption by a mixture of reacting substances is greater than the absorptions of the ingredients considered separately. If there is the possibility of a chemical change by mixing two or more substances, increased light absorption is observed in those cases. Hence a connection between light absorption and chemical reactivity has been established.

BIOCHEMISTRY

In several publications, N. R. Dhar and his collaborators, notably, C. C. Palit, N. N. Mittra, S. N. Chakravarti, Atma Ram, H. L. Dube, R. N. Ghosh and others, have shown that the phenomena of oxidation taking place in the animal body, in plants and in the soil are likely to be due to the following agencies:

1. Oxidation induced through the intake of oxygen by easily oxidizable substances like glutathione, insulin and other internal secretions, ascorbic acid and other vitamins generated in the body or added with food materials.
2. Acceleration due to the presence of iron and possibly of copper and manganese compounds.
3. Catalytic surfaces.
4. Light.

The internal secretions seem to be very important inductors in food metabolism.

They have also emphasized that the main function of the vitamins and internal secretions is to help the proper oxidation and metabolism of

food materials, and that light acts as a curative and preventive agent in diseases by acting not only as a stimulant of the body cells, but also as an accelerator in the oxidation of food materials. Deficiency diseases are generally caused by defective metabolism. A case has been made out in support of the theme that iron preparations, mild alkalis, phosphates, vitamins, internal secretions and light act as accelerators in the oxidation of food materials, and as such they should have good curative effect in the treatment of metabolism diseases (*Vide* Dhar, *New Conceptions in Biochemistry*, 1932).

J. C. Ghosh and his pupils are throwing light on the nature of biological oxidation in the investigation of organic sulphur compounds.

Mudaliar and Narasinha Rao (1932) are of opinion that pernicious anæmia is essentially a deficiency disease; the same view was given out by Dhar in 1925. The vitamin content and nutritive values of Indian foodstuffs are being investigated by N. C. Nag, B. C. Guha, B. B. Brahmachari, Datta and Banerji, Satya Narain and Ramaiah, Neogy and others.

The problem of metabolism of inorganic substances in men and animals has also received considerable attention in the hands of N. R. Dhar, C. C. Palit, K. C. Sen, D. L. Srivastava, Sahu and others.

The nutritive value of fodders has been investigated by several workers, notably, Ramaiah, Sahu, C. Singh and D. Raj, Dave and H. Singh, Murari, Krishnan, Seshan, Krishna Iyer and others. Organized research work on the nutrition of farm animals is being carried on at Coimbatore, Lyallpur and Bangalore under the auspices of the Imperial Council of Agricultural Research.

ENZYME REACTIONS

Srinivasa and his colleagues, Dey and Sitaraman, Narayan Menon and Narayan Rao, N. C. Nag, Damodaran, Basu and Nath, Giri and Subrahmanyan have published interesting results on enzyme reactions.

CARBON ASSIMILATION AND PLANT BIOCHEMISTRY

Sir J. C. Bose in his pioneering researches on plant physiology has thrown considerable light regarding the influence of temperature, light intensity, wave-length of the incident light, intermittent light, etc., on carbon assimilation. His studies on the accelerating influence of very small doses of substances like HNO_3, formaldehyde, HCN, etc., on carbon assimilation are remarkable. The work of Ekambaram and

Madhusudana Rao on the poisoning action of formaldehyde on the leaf cells resulting in the fall of water absorption is of merit.

J. C. Ghosh has deduced an important relation between the velocity of the absorption of CO_2 and the intensity of the incident radiation. Ghosh's work on the light absorption by chlorophyll in lecithin is likely to throw important light on the problem of carbon assimilation.

Dastur and Chinoy have reported the occurrence of two peak-periods of photosynthetic activity in CO_2 assimilation with the rice plant, one immediately on transplantation and the other about the middle of the flowering period.

Considerable light on the problem of respiration in plants and the factors affecting respiration has been thrown by the researches of Inamdar, Singh and others at Benares, Parija and his colleagues at Cuttack, Ranjan and his associates at Allahabad, G. R. Rao at Madras, H. P. Chowdhury at Lucknow, Rafique, Malhotra, B. N. Sinha and others.

S. S. Nehru (Lucknow) is investigating the accelerating influence of electromagnetic currents on the growth of plants and the improvement of the yield of crops.

It has been emphasized in publications by N. R. Dhar and Atma Ram that in plants the following equilibrium takes place:

$$n\,CO_2 + n\,H_2O = C_nH_{2n}O_n + nO_2$$

The direct action, *i.e.* photosynthesis is being opposed by the reverse action (respiration), which increases, according to the law of mass action, with increase in the concentration of carbohydrates formed from photosynthesis. Moreover, it is believed that the velocity of respiration in plants is appreciably accelerated by light and the influence of temperature on respiration is greater than that on photosynthesis. An explanation of the phenomena of "Solarization" and "Compensation point" has been advanced from the foregoing considerations.

Formaldehyde is synthesized and detected when dilute solutions (5%) of bi-carbonates of the alkali metals are exposed to sunlight for about four hours in thin layers (0·5 cm thick) either in open dishes or in dishes covered with silica plates at temperatures up to 30°; higher temperatures are prejudicial to formaldehyde production. It will be of interest to note that in nature the amount of carbon assimilation is less at 40° than at 30°. The amount of formaldehyde photosynthesized per 100 c.c. of solution exposed is 0·00007-0·0001 gm. Schryver's reagent is most sensitive for the detection of formaldehyde in small quantities.

Appreciable amounts of nicotine and amines have been photosynthesized on exposing dilute solutions of ammonia, formaldehyde and cupric salts in the presence of catalytic surfaces like ZnO, TiO_2, etc., to sunlight for about 80 hours. Moreover, when solutions of glycol and potassium nitrate are exposed to sunlight for about 8 hours in the presence of TiO_2 as a photocatalyst, tests for glycine are obtained. Similarly, a solution containing glucose and potassium nitrate with TiO_2 as a photocatalyst, when exposed to sunlight for the same period, appears to produce arginine. Longer exposure causes the disappearance of the amino-acids photosynthesized, probably owing to their photo-oxidation. These amino-acids obtained in photosynthesis can be readily tested by the valuable " Ninhydrin " test.

A new theory of carbon assimilation has been advanced, based on the view that the energy generated in the photo-oxidation of organic compounds supplied a part of the energy required for the photoformation of formaldehyde. In Nature, the photosynthesis that takes place in plants is aided by the energy obtained in plant respiration.

AGRICULTURAL CHEMISTRY, NITRIFICATION, MOLASSES AS FERTILIZER, ETC.

Subrahmanyan working at Rothamsted observed that water-logging appreciably decreases the bacterial numbers and the nitrate and increases the ammonia in the decomposition of plant residue.

H. N. Batham and his co-workers have investigated the nitrification of different amino-acids in soil, have summarized the observations made in different countries regarding the nitrate contents of the soil in different parts of the year and have concluded that it is always maximum at the summer months.

The problem of nitrogen recuperation by soils of the Bombay Presidency has been tackled by Sahasrabudhe and his collaborators. Organic matter to the extent of 2 per cent. of the weight of the soil has been found to be beneficial to nitrogen recuperation.

Organic manures have attracted the attention of several workers in this country. Vishwanath (Coimbatore) has emphasized the importance of organic manures in plant and animal nutrition.

The problem of compost production is being continued at the Plant Institute, Indore, and other places.

N. R. Dhar, Gopala Rao, N. N. Biswas, A. K. Bhattacharya, S. K. Mukerji, E. V. Seshacharyulu and Sant Prasad Tandon have shown that

light plays an important part in the phenomena of nitrogen fixation, nitrification and ammonification, which are believed to be mainly oxidation reactions. They have made numerous comparative experiments on the oxidation of ammonium salts to nitrite and of nitrite to nitrate with both sterilized and unsterilized soils kept in light and in the dark, and they found that the formation of nitrite and nitrate is always much greater in vessels exposed to light than in those kept in the dark. If nitrification was mainly a bacterial process, the amount of nitrification in the vessels in the dark with the unsterilized soil would not have been materially different from that in vessels exposed to light. It has been observed that amino-acids are readily oxidized to NH_3 in the presence of air and light. Thus one of the important stages in the process of ammonification is markedly acclerated by light.

The optimum temperature of the nitrite-formers in the tropical soil is 35° as against 25° observed in the soil of temperate countries.

The soil temperature in tropical countries in summer markedly exceeds the optimum temperature for bacterial nitrification and may even be greater than the maximum temperature at which the nitrite-forming bacteria can exist. Hence in summer, nitrification and nitrogen fixation in tropical soil cannot be mainly due to bacteria.

The amount of nitrate in soil is maximum in summer, and as most of the bacteria are likely to be killed owing to the high temperature prevailing in the soil, it is concluded that light plays an important rôle in nitrifications in soil.

The practice of increasing the fertility of soil by exposing fresh surfaces to sunlight, carried on from time immemorial in India, Egypt and other countries, finds a satisfactory explanation from the foregoing observations. Molasses and other carbohydrates and cellulosic substances have been used as manures for adding nitrogen to the soil and for the reclamation of alkali soils.

Systematic analysis of rain water carried on at Allahabad, Sylhet, Dehra-Dun, Cawnpore, Bangalore and other tropical centres abroad show that the cultivator in tropical countries receives more combined nitrogen on his soil from rain water than his brother living in temperate climates.

Important observations on the acidity and alkalinity of soils have been carried on by A. N. Puri, J. N. Mukerji and his collaborators, Lakshmana Rao, Hoon, Basu and Amin, Parameshwara Ayyar,

Chidambaram, D. Singh and Nijhavan, Gadgil and his collaborators, A. Sen, and others.

J. C. Ghosh and his co-workers and S. S. Bhatnagar and his colleagues, Gadgil and his collaborators, and Parameswara Ayyar and others have studied the absorption of different ions by soil, soil gels and their influence on the fertility of soil.

INDIA'S CONTRIBUTION TO MODERN PHYSICS

There is hardly a student of Physics to-day who has not heard of the Raman Effect. Saha's theory of Ionization Equilibrium in the atmospheres of stars and Bose's Statistics of Photons are two other outstanding achievements of Indian physicists. These contributions have each in its own way fundamentally influenced the progress of Modern Physics. But besides these three, there have been within the last thirty years numerous contributions in various branches of Physics from workers in different parts of India, which have substantially added to our knowledge in Physics. Indeed, the cultivation of Physical Science in this country since the beginning of this century has progressed so rapidly that it would not be possible within the limits of a brief review to give an idea of all that has been accomplished.

At the end of the last century, individual scholars in Government scientific departments had done fundamental systematic work in many branches of Applied Physics. Mention may be made of the work in Terrestrial Magnetism by Alan Broun at Trivandrum and by Chambers at Colaba, the basic work on Indian Meteorology by Blanford and Eliot and the Trigonometrical and gravity survey work of the Survey of India. From the Indian point of view, however, the real first-rate contribution to pure Physics that had been made by an Indian was the brilliant work of Professor J. C. Bose on Electric Waves. Using a modified form of electric vibrator consisting of four small platinum spheres separated by minute air-gaps, Bose generated electric waves shorter in wave-length than any that had been produced before, and with the help of a delicate steel-spring coherer, also designed by himself, demonstrated various properties of electric waves. He also independently discovered the rectifying action of crystal contacts for rapidly alternating electric currents. As is well known, Prof. Bose's activities were, however, soon diverted from pure Physics to Plant Physiology, into the investigation of which he brought to bear his unrivalled skill as an experimenter.

In attempting to make a survey of the progress of Physics in India, it may not be out of place to mention the work of two great men who, though not investigators of Physics themselves, have largely contributed to the growth of Physics in this country; one of them is Dr. Mahendralal Sircar, the founder of the Indian Association for the Cultivation of

Science. In founding this Association in Calcutta, out of funds partly collected from the public and partly contributed by himself, the object of Dr. Mahendralal was to establish an institution for the investigation of the Physical Sciences and for the expounding of the latest advances in the sciences to the general public. The first of these ambitions he could not realize in his own lifetime, but later events have shown how far-sighted he was. The other person is Sir Ashutosh Mookerjee. Sir Ashutosh was intimately connected with the Calcutta University for over 34 years and was for 8 years its Vice-Chancellor. Realizing that a university, to be worth its name, should be a real centre of learning and research, he used all the powers of his great personality to the establishment of various departments of post-graduate studies. His efforts were largely instrumental in attracting princely endowments from Sir Tarakanath Palit, Sir Rashbehari Ghosh and others for the foundation of professorships, fellowships and studentships in different branches of Science. One condition of these professorships was that they should be held only by Indians; and the creation of these appointments, therefore, gave an opportunity to demonstrate that Indians, when rightly chosen, could excel even in those branches of learning which were considered to be essentially Western.

We shall now attempt to give a brief review of some of the main contributions that have been made by Indian workers to Physics. The work may be roughly classified under Acoustics, Optics including classical and X-Ray scattering and Raman Effect, Spectroscopy and Astrophysics, Quantum Statistics, Magnetism and the Physics of the Earth and of the Atmosphere.

A. ACOUSTICS

Acoustics was one of the subjects which attracted the attention of Sir C. V. Raman very early in his scientific career. Some of the earliest papers of Raman were on the vibrations of strings. He has made a detailed theoretical and experimental analysis of the vibrations of a bowed violin string. Raman and Banerji's investigation of the acoustics of the pianoforte has become classical and has been the starting-point of a large number of theoretical and experimental investigations both in this country and abroad. Among other Indian workers on this subject are Panchanan Das, S. Bhargava, R. N. Ghosh, A. K. Datta and K. C. Kar. The unique musical qualities of the Indian stringed instruments, the *vīṇā* and the *tānpurā*, have been shown by Raman to be due to the

special form of bridge employed in them; the harmonic character of the vibrations of the Indian musical drum or *mṛidaṅga* has been shown to be caused by the special loading and damping of the drum-head, a method which was evolved by the ancient Indian musical instrument-makers. The question of maintaining the oscillations of a vibrating body by forces applied periodically once in a large number of oscillations has been treated theoretically and applied by Raman and Ashutosh Day and by D. Banerji to the determination of the absolute frequency of a tuning-fork. Questions of architectural acoustics such as the whispering gallery effect in the St. Paul's Cathedral in London, and the Victoria Museum in Calcutta have been studied by Raman. The practical problem of improving the acoustical properties of large lecture halls has been tackled by Parameswaran and Kalyanaraman in Madras and by S. Ray in Lucknow. A full account of Indian work on the vibrations of musical instruments will be found in Sir C. V. Raman's monograph on the subject in the German *Handbuch der Physik*.

B. OPTICS

In Optics, again, the main contributions have been made by Raman and his students.

Numerous problems on diffraction or the bending of light round corners which arise from the wave nature of light were investigated in his laboratory by S. K. Mitra, N. M. Basu and others. S. K. Banerji made an important theoretical study of the Foucalt test—a very simple and elegant method for the detection of small irregularities on optical surfaces or of small changes in refractive index in liquids and gases such as may arise from small changes of temperature or by the passage of sound waves. The phenomenon of laminar diffraction or the diffraction at an edge where a transparent plate such as mica suddenly changes its thickness or refractive index was studied first by P. N. Ghosh and later by Ramakrishna Rao.

Haidinger's rings—a class of rings observed when light (preferably of one colour) diffusely scattered from a white surface falls on a plain parallel plate of a doubly refracting material like mica was studied by T. K. Chinmayanandam. Interference and diffraction phenomena in liquids in which light of different colours travels with different velocities were investigated in a series of interesting papers by N. K. Sethi who showed the importance of the concept of group-velocity in dealing with such phenomena. Numerous other phenomena of classical wave optics,

for example, the flow of energy when total reflection takes place at the boundary between two transparent media and the colours of diffraction at metallic edges, have also been studied by Raman and his pupils.

Working in Prof. Raman's laboratory, B. B. Ray studied in 1920 and 1921 the colour and polarization of the light scattered by colloidal suspensions of sulphur and made detailed calculations of the scattering of light by small transparent spheres of refractive index greater than unity and of diameter in the neighbourhood of the wave-length of the radiation. The question is of great interest in connection with some problems of meteorological optics such as coronae and brocken-bows.

In 1921, during voyages to and from Europe, Raman made observations on the colour of the sea. Immediately after his return, he followed these up with laboratory experiments on the scattering of light by pure water. These provided him with the necessary material to show that the blue colour of the sea was due to the scattering of light by the molecules of water. Various experimental and theoretical researches were soon started in his laboratory and during the next few years the whole subject of light-scattering in gases, liquids and solids was investigated in great detail. Among the more important results of the investigations may be mentioned the establishment of the connection between molecular scattering and critical opalescence, the development of a molecular theory of scattering in fluids and the quantitative investigation of the intensity and polarization of the light scattered by a large number of gases and vapours. The polarization of the light scattered by a fluid, especially by a gas or vapour, gives valuable information regarding the anisotropy of the molecule or the manner in which the optical properties of the molecule differ in different directions. The relations betewen the optical anisotropies of the molecules of a fluid and various other phenomena such as the doubly refracting properties which it acquires when placed in strong electric or magnetic fields were also investigated. A theory of the optical anisotropy of a molecule as being due to the mutual influence of the atoms composing the molecule was developed. Prominent among the workers who were associated with Prof. Raman in these developments were K. R. Ramanathan and K. S. Krishnan.

The scattering of light from the interior of a liquid arises in the main from the local deviations from orderly arrangement of the molecules of the medium. An analogous effect is the scattering of light at the surface of a liquid which is produced by the minute and fluctuating

departures from planeness of the surface which it is continuously undergoing owing to thermal movements and the finite value of the surface tension of the surface. The phenomenon is one of considerable scientific interest and there are many features which distinguish the scattering off the surface of a non-metallic liquid like water or benzine from that of a metallic liquid like mercury. The phenomenon of scattering at the surface of pure liquids was discovered at the laboratories of the Indian Association and studied in considerable detail by Prof. Raman and L. A. Ramdas.

Following up some old unexplained observations on the colour of the light scattered by some pure liquids, Raman and Krishnan discovered in 1928 that if monochromatic light or light of strictly one colour was passed through a transparent liquid, the light scattered by the liquid contained not only light of that colour but also monochromatic light of some other colours. This property was not confined to any particular substance or state of matter or to any particular radiation, but was a very general one, the change of frequency of the light depending mainly on the chemical bindings between the atoms in the molecules of the substance. This discovery, now known as the Raman Effect, is one of the few direct experimental evidences for the quantum nature of light and has, besides, furnished a powerful and simple method for studying the forces of binding inside a molecule. It takes rank as one of the greatest experimental discoveries of the present century. The award of the Nobel Prize in Physics to Sir C. V. Raman in 1931 was a sign of the international recognition of its importance. The subject of Raman Effect has now a very large and growing literature. Among the Indian workers who have made important contributions to the subject are K. S. Krishnan, S. Bhagavantam, S. Venkateswaran, A. S. Ganesan, P. Krishnamurthi, S. C. Sircar, I. Ramakrishna Rao and N. Nagendranath.

While yet on the subject of Optics, mention may be made of the studies of the crystal structure of solids by the use of X-Rays—which are, as is well known, of the same physical nature as waves of light but only of much shorter wave-length. The structure of a number of organic crystals such as naphthalene, anthracene and dibenzyl has been analysed by K. Banerji and J. Dhar, and of many varieties of coal and resins by C. Mahadevan in the laboratories of the Indian Association. Following a theoretical paper by Raman and Ramanathan, considerable experimental work on the scattering of X-Rays in liquids has been done,

leading to much new knowledge of the orderliness of arrangement of molecules in liquids and amorphous solids and its dependence on physical conditions and molecular shape. C. M. Sogani, P. Krishnamurthi and V. I. Vaidyanathan have been the most active workers in this line. There is another growing school of X-Ray work in the Royal Institute of Science at Bombay under Prof. M. Prasad.

C. SPECTROSCOPY AND ASTROPHYSICS

In a series of three papers published in 1920 and 1921, Prof. Meghnad Saha applied the laws of thermodynamics to calculate the equilibrium between ordinary atoms, ionized atoms and electrons under different conditions of temperature and pressure, and showed how the results obtained opened out a way for understanding many peculiarities of the spectra of the sun and stars. His method was to treat the ionization of an element as a chemical decomposition, the decomposed constituents being, however, an electron and the rest of the atom. As the temperature of the element is gradually raised, the weakest bound electron is loosened from the atomic structure, and at a still higher temperature the next weakest bound one, and so on. Under conditions prevailing in the sun's atmosphere, some of the atoms may not be found in the normal state at all. Saha's theory explained why the spectral lines of some elements did not appear in the Fraunhofer spectrum of the sun and predicted correctly that some of the missing elements would be found to be present on examining the spectra of sunspots, and some others on examining the spectra of faculae.

Supplemented by the theory of selective radiation pressure which was also first advanced by Saha, his theory gave a satisfactory explanation as to why a heavy atom like calcium occurred in the higher levels of the sun's chromosphere more prominently than lighter atoms like hydrogen or helium. The theory provided one of the best methods of estimating the surface temperatures of stars. Saha's work on ionization equilibrium is considered to constitute a landmark in the history of Astrophysics.[1]

Besides following out the consequences of his theory, Saha and his students have done a large amount of work on the investigation and analysis of the spectra of atoms. Among prominent workers of the

[1] Prof. Saha assisted by his students has made a very valuable contribution to the study of modern Physical Science in this country by his publication of two clearly written advanced text-books, *A Text-book of Heat* and *A Treatise of Modern Physics*.

Allahabad school in this field are N. K. Sur, P. K. Kichlu, K. Majumdar, S. L. Malurkar, S. C. Deb, G. R. Toshnival and Dhavale.

In recent years, the attention of workers at Allahabad has been directed to the study of continuous absorption spectra in the ultra-violet of simple inorganic gaseous compounds such as oxides, sulphides and chlorides and the discussion of their significance. These spectra have been utilized for estimating the energies required to dissociate compounds into their constituent atoms and the energies of excitation of some of these atoms. P. K. Sen Gupta, A. Datta and M. S. Desai have done important work in this line.

There are several other centres in India where spectroscopic studies are actively pursued. The Physics Department of the Central College at Bangalore, first under Prof. Metcalfe and later under Prof. Venkatesachar, is noted for its elegant studies on the absorption and emission spectrum of mercury vapour. It has now specialized in precision work on the hyperfine structure of spectral lines—a branch of spectroscopy which gives important information regarding the magnetic moments of the nuclei of atoms. The band spectrum of mercury vapour has been investigated and many spectral lines of elements like gold, silver and mercury classified into series. The prominent Bangalore workers in Spectroscopy are, besides Prof. Venkatesachar, Sibaiya, T. S. Subbaraya and B. V. R. Rao.

The spectroscopic investigations of Prof. A. L. Narayana and of Dr. K. R. Rao have made the laboratories of the Maharaja's College, Vizianagram, very familiar to spectroscopists. Prof. Narayana is continuing his studies at the Solar Physics Observatory, Kodaikanal, and Dr. Rao after a sojourn in a number of prominent spectroscopic laboratories of Europe is now actively at work in the Andhra University at Waltair. The Andhra school has been responsible for the experimental study and analysis of the spectra of a large number of atoms. The work on the spectra of lead, arsenic, selenium and tellurium in different stages of ionization may be especially mentioned. Dr. Badami of Bombay has published important papers both on atomic and molecular spectra.

The work of Prof. S. Datta of the Presidency College, Calcutta, on the absorption spectra of alkali atoms finds an important place in modern spectroscopic literature. At the University College, Calcutta, Prof. P. N. Ghosh has created an active school of work on the molecular spectra of compounds. Another important school of research on the

same subject is the Physics Department of the Muslim University at Aligarh under Prof. R. Samuel and Dr. R. K. Asundi. Prof. Wali Mohammed at Lucknow was one of the earliest experimental workers on the hyperfine structure of spectral lines and is continuing his work on the subject with his students.

Any account of spectroscopic work done in India would be incomplete without a reference to the work done at the Solar Physics Observatory, Kodaikanal. The researches of Evershed on the displacement of spectral lines in the penumbræ of sunspots revealed the interesting fact that the movement of the gases in sunspots is radial and outward from the spot-centre in the middle layers and inward in the higher layers of the chromosphere. The precision measurements on the displacements of a large number of spectral lines in the centre and limb of the sun (later extended by St. John at the Mt. Wilson Observatory) provided invaluable data for the testing of Einstein's prediction of the displacement of spectral lines of atoms when in a strong gravitational field. Daily photographs of the sun's disc and its surroundings taken by means of the spectroheliograph in the light emitted by calcium and hydrogen, and their discussion by Evershed and Royds have added considerably to our knowledge of the processes going on in the sun's atmosphere.

A good deal of important theoretical work in Astrophysics has been done by S. Chandrasekhar on problems of stellar structure. He has made detailed investigations on the absorption of radiation by highly ionized gases such as exist in the interior of stars. D. S. Kothari and R. C. Mazumdar have also contributed substantially to the same subject. Chandrasekhar has also put forward a very interesting hydrodynamical theory of the solar chromosphere.

The Nizamiah Observatory at Hyderabad, first under Mr. Pocock and later under Mr. T. P. Bhaskara Sastri, has earned a high reputation in the astronomical world for its work in connection with the International Star Catalogue.

D. MAGNETISM

Although the elementary facts regarding the magnetic properties of iron have been known for a long time, it is only within the last few decades that it has come to be recognized that magnetism is a universal property of matter. Indian workers have made important contributions to this subject. Following their work on the optical anisotropies of molecules, Professor Raman and his students extended their investigation

to the magnetic and electric anisotropies of molecules and the phenomena to which they give rise, such as magnetic and electric double refraction. Raman and Krishnan showed that it is possible to calculate the magnetic anisotropy of the molecules of a fluid, if their optical anisotropy and the double refraction induced in the fluid when placed in a magnetic field are known. Work on this line was extended by Ramanadham and Chinchalkar. Working in the laboratories of the Indian Association, V. I. Vaidyanathan developed an elegant method of measuring the magnetic susceptibilities of gases. Chinchalkar made the interesting discovery that aqueous paramagnetic solutions of salts of the rare earth metals like cerium, praseodymium and erbium showed a negative double refraction. It was previously considered that only liquids of the diamagnetic class—those that get repelled by a strong magnet—could exhibit this property. Starting from a suggestion of Professor Raman (made independently by Professor Ehrenfest of Holland also) that the magnetic behaviour of a solid would undergo change with decrease in particle size, a good deal of experimental work has been done by V. I. Vaidyanathan and by Prof. Ramachandra Rao and his students.

Professor D. M. Bose of Calcutta and his students, working on different lines, have carried out theoretical and experimental investigations on the magnetic properties of paramagnetic substances in the light of modern theories of atomic structure. Prof. Bose's formula for the magnetic moments of the ions of the elements in the first transition group (like vanadium, chromium, iron, nickel, etc.) has played an important part in the development of the theory of paramagnetism of elements. Professor Bhatnagar of Lahore has built up an active school of magnetic research there. He and his students have devised a new apparatus for the measurement of magnetic susceptibilities employing the method of optical interference for measuring minute displacements. They have improved the Curie balance. Using these methods, they have measured the susceptibilities of a large number of crystals, liquids and solutions and applied the results to elucidate questions of molecular structure. The work of Professor Krishnan and his associates, first at Dacca and later in the Indian Association at Calcutta, on the magnetic and allied properties of crystals has already become classic. Krishnan has developed a very neat and delicate method for the measurement of the magnetic anisotropies of feebly magnetic crystals by oscillating them in a uniform magnetic field when suspended with different axes parallel to the field. He has also introduced refinements in the measurement of the principal

susceptibilities of crystals. The knowledge thus gained has been utilized for determining the precise orientation of molecules in their unit cells—thus providing a new approach towards the elucidation of the crystal structure of solids, often supplementing the information obtainable by X-Ray methods of analysis. The theory of ferromagnetism has been investigated mathematically by Principal G. S. Mahajani of Poona.

E. QUANTUM STATISTICS AND THE THEORY OF RELATIVITY

Mention has been made in the introduction of Prof. S. N. Bose's work on Quantum Statistics. In trying to account for the manner in which light of different colours is contained in the radiation coming from a completely black body—which may be experimentally realized by studying the radiation coming from a small hole in one of the walls of a chamber maintained at a uniform temperature—Max Planck in 1900 found it necessary to introduce the idea that the energy of radiation consists of small indivisible bundles or quanta, the energy of a quantum being proportional to the frequency of the radiation. In making the analysis, Planck had to call in the aid of material particles or 'resonators' in the argument. Bose worked out a new statistics of these ultimate 'light-particles' or 'photons' without invoking the aid of material particles, and showed that the number of photons within a definite range of frequency contained in a unit of volume at a definite temperature is uniquely determined, and obtained the correct distribution of the density of radiation. Bose's method was immediately applied by Einstein to derive a more refined law for the distribution of velocities among molecules than the classical Maxwell-Boltzmann law. Fermi and Dirac still further modified it for particles by introducing a further restriction. Much of modern theoretical work in Physics such as Sommerfeld's theory of conduction in metals has its starting-point in Bose's fundamental work.

Mathematical problems arising from the General Theory of Relativity have been tackled by Prof. D. D. Kosambi of Poona. Prof. N. R. Sen of Calcutta has shown one way in which the rapid recession of nebulæ which has been observed by astronomers, can be explained on the Theory of Relativity.

F. GEOPHYSICS

Geophysics is the application of Physics to the study of the earth and its atmosphere. Terrestrial Magnetism, Seismology or the study

of earthquake phenomena, Hydrology or the study of the properties of sea and river waters and their movements, Meteorology or the study of the earth's atmosphere in its normal and variable moods, including the phenomena of the upper atmosphere such as polar and non-polar auroræ and the propagation of wireless waves in the upper layers of the atmosphere, are among its most important branches. Some of these subjects, being of direct practical importance, are under the special care of Government departments and the major part of the work in these lines have, therefore, naturally come from official organizations. But in some branches, such as the propagation of electric waves in the earth's atmosphere, the main contributions have come from outside workers.

The discussion by Dr. Moos of fifty years' record of magnetic data obtained at Colaba is an outstanding piece of work on the subject of Terrestrial Magnetism. In Seismology, many important investigations on the effects of earthquakes, the nature of the disturbances constituting them and their manner of propagation have been carried out by members of the Geological Survey of India. Oldham's work on Indian earthquakes is a classic contribution to the subject. Recently Dr. S. K. Banerji of the Indian Meteorological Department working at the Colaba Observatory, Bombay, has made a very notable contribution to the subject by an investigation of "microseisms" or feeble short-period movements of the earth's crust. He finds that a special type of microseisms is produced whenever there are cyclonic storms in the neighbouring seas, and this has provided a means of ascertaining the existence of a storm-centre when other means of detecting it are unavailable.

In Meteorology, considerable additions to knowledge of a fundamental character have been made by Indian workers. The investigation of upper air temperatures in India by self-recording instruments carried by sounding balloons up to heights of about 20 miles above the earth's surface has enabled us to obtain a correct picture of the distribution of temperature in the earth's atmosphere, thus providing basic information for the discussion of the general circulation of the atmosphere. The Upper Air Observatory at Agra started by Mr. Field and now under Mr. G. Chatterjee is one of the best organized institutions of its kind. New instruments for the study of upper air conditions have been introduced. The investigation of upper winds, temperatures and humidities has provided new viewpoints for the study of the monsoons and of the storms occurring in Indian seas, their places

of origin or concentration, their movement and the distribution of wind and rainfall round their centres, the nature of atmospheric "fronts" associated with them and the properties of air-masses participating in them. Special local phenomena such as the dust-storms of north-west India, the nor-westers of Bengal, the sea-breezes near the coasts, mountain and valley winds and tornadoes have been studied. The statistical methods of long-range forecasting introduced into Meteorology by Sir Gilbert Walker have been extended and improved. The laws governing the distribution of temperature and water-vapour in the atmosphere and the rôle of radiation in these phenomena have been studied. The electric fields produced by thunderstorms, the mechanism of their origin and the electricity carried down by rain and snow have been investigated first by Simpson and later by Banerji. Meteorology, being practical in its outlook, has to supply information regarding the normal and abnormal features of weather to the seaman, the aviator, the engineer and the farmer. To study the special meteorological need of the agriculturist, a special department of Agricultural Meteorology has been recently opened at Poona under Dr. L. A. Ramdas and is actively investigating the microclimatic conditions in the air-layers near the ground and in the first few feet of the soil—the regions which are of special interest to the agriculturist.

Leaving the lower regions of the atmosphere which are of special interest to the meteorologist, and ascending to the rarer regions of the empyrean, Prof. S. K. Mitra, H. Rakshit and their co-workers at Calcutta have carried out various measurements on the reflection of wireless waves from the upper regions of the atmosphere, such as the determination of the heights of the reflecting layers, their ionic densities and the variations of these quantities with the hour of the day and with the season. It is now generally known that the propagation of wireless waves round the spherical earth depends on the existence of free electrons in the upper atmosphere. Work on wireless waves is also carried on at the Indian Institute of Science, Bangalore, and at the Physical Laboratories of the Universities of Allahabad and Dacca. Even during the darkest nights, the earth's upper atmosphere emits a very feeble light, part of which is due to the presence of atomic oxygen. The character of the radiations emitted by the night sky and its variations have been investigated at Poona by Ramanathan and Karandikar.

The foregoing brief survey, though sketchy and incomplete, will convey some idea of the part that Indian workers are taking in the

cultivation and advancement of various branches of Physics. It augurs well for the future that fresh enthusiastic workers are being continually attracted to the study of the subject. It is another encouraging sign of the times that research in the positive sciences is receiving interest from the general public. May the spirit of Ramakrishna illuminate the path of the workers in their endless quest for truth!

THE SCOPE AND ACHIEVEMENTS OF HINDU ASTROLOGY

In these days there is a growing tendency to sneer at everything which we cannot explain in terms of the natural laws that have so far been discussed by the modern scientists. And, naturally, the abstract principles of Astrology, into the secrets of which Western science has not yet been able to penetrate, have been described by many as unscientific. But is that really so? We should try to ascertain just where this time-honoured study of the Hindus stands before we leave it aside as a bundle of prejudices.

Hindu Astrology mentions only nine *grahas* (planets). They are the sun (Rabi), the moon (Chandra), Mars (Maṅgala), Mercury (Budha), Jupiter (Bṛihaspati), Venus (Śukra), Saturn (Śani) and the nodes (Rāhu and Ketu). Of these the first seven are material bodies and can be seen with the naked eye, whereas the remaining two are imaginary points formed by the intersection of the paths of the earth and the moon. There are certain other planets in the sky, namely Uranus, Neptune, and Pluto, but they do not seem to find any place in Hindu Astrology. The reason may lie in the fact that they were not discovered at the time of Parāśara, who may legitimately be called the father of Indian Astrology. The sun and other *grahas* owing either to their relative distance from the earth or to other causes yet unknown, are exerting a specific influence on human destiny. But what is the nature of this influence, and how the relative positions of these distant heavenly bodies can at all determine the course of events in the life of a free rational being like man, are problems which have not yet been scientifically solved. Yet we have no right to deny the influence if the deductive calculations based on it are observed to be verified by actual facts. Anyway, the heavenly influence of which Astrology has taken note is sure, regular and permanent, and can therefore form the basis of a truly scientific calculation. But then it is to act through the medium of the earthly environments in which a subject is placed for the time being, and these environments are mostly artificial and varying in nature, so much so that it is hardly possible to draw any universal conclusion about them. This explains the paradox why, in a science of foretelling the events of our earthly life, the earth, which has obviously the maximum influence on it, has been left to be dealt with by our own experience, judgement and foresight. Thus the

uniformity of the planetary influence on human life is, briefly speaking, the basis of scientific Astrology, whereas the varying nature of our environments, through which the planets are to act, sets its limitations upon them.

With this key-note, let us now proceed to have an idea about the success achieved by the Hindu astrologer in his study of human life.

First, let us take the case of health. The Hindu made an accurate study of this very important subject, and by an intelligent study of the *Viṁśottari* time-table, one can tell not only death and major illness, but also the minor breakdowns of health. We have, however, no reason to think that Hindu Astrology ignores the importance of the medical science. But a strict observance of hygienic rules is rarely practicable, and in spite of centuries of progress the medical science has to advance much further before a doctor can give an absolute veto to our predictions.

Our next subject is wealth and success. Owing to its profound significance on human life, it has found a very important place in Hindu Astrology, and amazing success has been achieved in forecasting income and success. It may be argued that man earns money by his labour, in which he has freedom; but labour alone does not bring money as desired. A man may have all sorts of equipment for earning and also the desire; yet the unseen forces play a very important part in his life, and over these forces he has very little control. The science of Economics with the modern facilities of communication has no doubt minimized the influence of chance in economic life and has placed business on rather a scientific basis, but, as everybody knows, it can hardly take note of all the forces that may possibly disturb the monetary equilibrium. Is chance, therefore, everything? A Hindu astrologer is not prepared to accept such a proposition either. Because, in that case, he would run the risk of denying the law of universal causation on the one hand, and freedom of will on the other. Accordingly he does not ignore *purushakāra*, *i.e.* the voluntary application of a man's knowledge and power, and its efficacy in building his destiny, but he recognizes that there are other potent forces, perceptible and imperceptible, which may help or hinder its effects. The perceptible circumstances consist of the earthly environments, and the imperceptible ones are sometimes spoken of as supernatural influences. The latter are generally regarded as beyond the scope of calculation. But the science of Astrology has considerably brought them within the range of mathematical calculation by its theory of

planetary influence. As a person, at the time of determining the direction in which he should apply his initiative, tries to take due note of the earthly circumstances actual and probable, so Astrology can help him in taking into consideration the so-called supernatural circumstances as well. Thus this science, far from denying human initiative, assigns to it its proper place, and is of great assistance in guiding it to the proper field, at the proper time, for the purpose of attaining the desirable end. Now, if the proudest upholder of the power of *purushakāra* does not think it beneath his dignity to regulate his activities in the light of earthly circumstances, there is no reason why he should also not be guided by the knowledge of the supernatural influences supplied by Astrology. The utility of such guidance is further proved by the fact that in spite of all precautions and remedies adopted with regard to known circumstances, men are often found to be unsuccessful in their attempts, and that such failures are not unoften found to be explained in terms of the planetary influences.

Then as to profession. The spheres of human activities are numerous, and they are the creations of man. So it will be impossible for an astrologer to predict what particular line of action will actually be adopted by a particular person. Moreover, there are artificial restrictions imposed on him as a member of the society. The nature of professions is also changing age after age. All these seem to make the task of an astrologer exceedingly difficult. But a Hindu astrologer can definitely say for what a particular individual has a natural aptitude, and in what sphere of life, therefore, he has a great probability of success. Hence, if the astrologer fails in his predictions as to the exact profession a person actually adopts, it is not because his science is inaccurate, but because more is expected of it than it claims to give. The nature of the profession actually adopted by a man is largely determined by the circumstances in which he is placed, and unless the natural gift of the individual becomes the guiding factor in the selection of his profession, there is nothing really to help an astrologer in his forecast. The need for economic reorganization based on the natural gifts of individuals has already been recognized by the civilized society, and when there is a practical move in that direction, we are sure the predictions of Astrology will be much more accurately verified. Even under the present circumstances, it can be of great help to people in its advisory capacity, by making them conscious of their natural powers and dispositions and by instructing them about the profession in which they would succeed.

Then comes the question of marriage. It is a very important question, which should be properly solved, but it is the most difficult of all the problems with which an astrologer is confronted. Marriage, as we find it to-day, is essentially a human institution controlled pre-eminently by social and moral rules and sometimes by political necessities. Child marriage has recently been put a stop to in this country. Are we now to conclude that with the enforcement of the Child Marriage Act in India the planets have changed their course so as not to indicate the marriage of our girls before the age of fourteen! The real position, however, is that the planets indicate only certain influences on human life; they are not the sole factors in determining the exact character of every event in it. These influences can act, as mentioned before, only through the medium of men's *purushakāra* as well as their earthly environments. It is, therefore, conceivable that with the change in men's outlook and environments, the actual results of the influences of the planets naturally vary. This explains why, in spite of the same planetary influence, different grades of results are often found in actual life.

Now, if the ceremony of marriage is purely a human institution, how is it possible to predict it by a reference to the planets? The fundamental cause of marriage is the impulse of sex, and were it the only factor, certainly Astrology could make an accurate study of the problem of marriage. But in the present state of things desire for union is only a small part of the factum of marriage. The pressing demands of the society are there, and with this is added the insuperable problem of finance, which few can possibly ignore. Marriage, therefore, rests not only on human instinct but also on other factors, many of which are too varying to yield to any scientific investigation. A Hindu astrologer will therefore think thrice before he predicts the exact time of marriage, though he finds indication to that effect, because the whole thing may eventually end in a love affair without getting the sanctity of social recognition, which in fact is the essence of our marriage. He will point out the periods when marriage is possible, but will not as a matter of prudence fix any particular time in his prediction of the actual ceremony. In our opinion, however, the exact time is not of very much importance, but whether or not the marriage will be a lucky one. And here Hindu Astrology will give a quick response. To a Hindu marriage is a sacrament. He should select a bride who will not only be his loving mate in this world, but also a helping friend in his spiritual culture. The Hindu custom would therefore make it compulsory not only to gather all sorts

of information that is available from independent sources, but also to compare the horoscopes of both the parties before the marriage is actually negotiated. The Hindu astrologer has therefore carefully cultivated the art of studying human nature from the planetary cast, and by a reference to the position of the planets and the time-table, he can accurately judge when marriage is likely to be lucky and when unlucky.

Next we may deal with the questions of travel and quarrel. Hindu Astrology can point out the periods when an individual will be involved in quarrels, or when he will be out on a tour. But evidently it is impossible for him to denote the person with whom he is to quarrel, or the place to which he is to travel, these being matters of detail for the particular individuals placed in any particular environment. He can however give out the result of the quarrels with amazing success, and thus can give definite advice to the intending fighters.

Next as to the mind. Consistently with the assumptions of Hindu philosophy, Hindu Astrology has also taken the mind as the centre of all perceptions. So by a careful analysis of the subtle planetary influence on human mind, the precise nature of all incidents affecting the mind can be most easily found out. Thus by a reference to the influence of the planets on the mind of the subject, a Hindu astrologer can predict not only the happy or unhappy state of the mind but also the loss or gain, family happiness or unhappiness, that may occur at different periods of his life.

We have practically finished our brief analysis of the scope of Hindu Astrology, but a word has yet to be said about the timing of the incidents. Various methods have been discovered, but with the exception of one, none has yet captured our imagination. But the one on which we have relied is unique in the world. It is the famous *Viṁśottarī* system, a supreme contribution of Parāśara. If the cautions we have cited are remembered, and the system is worked faithfully, Hindu Astrology will undoubtedly prove its efficacy to the entire satisfaction of the modern world. But we must not rely on the *sūtras* (aphorisms) of text-books like *Bṛihat* and *Laghu Pārāśarīs*, which, though claiming to interpret the *Viṁśottarī* time-table, have in our humble opinion not only not understood the fundamental idea underlying that time-table, but have given the lie direct to what was in the mind of the propounder of the system. The foundation of the *Viṁśottarī* system lies in the recognition of the Hindu conception of *Śakti* or Energy that pervades the universe, but evidently nothing of it is to be found in the works of the subsequent

writers. Again the *Vimśottari pratyantardaśā* system and the *Ashṭottari daśā* system, on which so many things have been said by notable writers and by our modern astrologers, are absolutely useless. There are, however, as we have said, great truths in the *Vimśottari antardaśā* system, but the method of reading results therewith so far laid down in the text-books is equally fruitless. So, unless we are prepared to reshuffle the method of calculation and sift truth out of the huge mass of untruths, there is no good in trumpeting the works of our great sages. It is not possible to give here even a bare outline of our researches in the subject, which we have advisedly reserved for a future volume. We shall be glad to satisfy the curiosity of earnest readers by practical demonstrations, which, we believe, will prove infinitely superior to any amount of argument that a scientist may offer.

The unique success of Indian Astrology proves it beyond any reasonable doubt that the Hindu had a wonderfully scientific mind. If we can properly present the astrological works of our sages before the civilized world, it cannot but be struck by India's remarkable achievement in this science. But unfortunately in this matter we are still helpless. Neither our universities nor the government have as yet made any arrangement for a systematic research in Astrology. But if they sincerely desire any real advance in this branch of knowledge, it can be definitely demonstrated that Hindu Astrology is even more accurate than Meteorology, Medicine, Economics and other imperfect sciences which they have already recognized.

IV

THE ARTS



THE PART OF ART IN INDIAN LIFE

I

Works of art (*śilpa-karmāṇi*) are means of existence made (*kṛita, saṁskṛita*) by man as artist (*śilpin, kāraka, kavi*, etc.) in response to the needs of man as patron (*kārayitṛi*) and consumer (*bhogin*) or spectator (*drashṭṛi*).[1] The production of works of art is never an end in itself; "the work of the two hands is an otherwise determined element of natural being;"[2] "all expressions, whether human or revealed, are directed to an end that is over and beyond the fact of expression;"[3] "as the purpose, so the work."[4] Art (*śilpa, kalā, kāvya*, etc.) in its becoming (*utpatti*) is the manipulation or arrangement (*saṁskaraṇa, vidhāna*, etc.) of materials according to a design or pattern, preconceived (*dhyāta, nirmāta*) as the theme (*vastu*) may demand,[5] which design or pattern is the idea or intelligible aspect (*sattva-jñāna-rūpa*) of the work (*karma*) to be done (*kārya*) by the artist.

Works of art, regarded as a food (*anna*), can only be thought of as "luxuries" when the patron's appetites (*kāma*) are excessive (*purushārtha-visaṁvādi*); man eats to live, and can only be thought of as "greedy" (*lubdha*) when he lives to eat.[6] By works of art the self is

[1] Distinction of things made (Lat. *factum*) from things done (Lat. *actum*). The thing made and the thing done, art and ethics, are one and the same only for the artist, whose function (*svadharma, svakārya*) is to make; for any other to make is inordinate (*adharma*). That is with respect to any one kind of making; the artist is not a special kind of man, but every man—either vocationally, or at least upon occasion and in some capacity—a special kind of artist.

It is possible, of course, for the artist to be his own patron, as when a man builds a house for himself, or weaves his own garment. In this case, however, as soon as he proceeds from intention (*kratu*) to action (*kriyā*) his function as patron ceases, and he becomes the other man. When the work is finished, he becomes a consumer, or *ex post facto* patron, and is in a position to judge the work done, viz. from the artist's point of view with respect to its intrinsic quality, (*sukṛitatva*), and from the consumer's with respect to its convenience (*yogyatā, puṇyatā*).

[2] *Kaush. Up.* III. 5.

[3] *Sāhitya-Darpaṇa.* V. 1. Commentary.

[4] *Yathkratuḥ tatharma, Bṛih. Up.* IV. 4. 5.

[5] *Śukranītisāra* IV. 4. 150, *sevya-sevaka-bhāveshu pratimā-lakshaṇaṁ smṛitam*, where in more general terms, *sevya* corresponds to *vastu, anukārya*, and *sevaka* to *kāraka*.

[6] "For so it is that his children (*prajā*) carry on as though obeying orders, they live dependent on (*upajīvanti*) their such and such desired ends (*yaṁ yamantamabhikāmāḥ*). *Chhand. Up.* VIII. 1. 5. Prajāpati emanated children (*prajā*). He said, 'What are your

nourished in its vegetative (*annamaya*) modes of being, and re-minded in its intellectual (*manomaya*) modes of being[1]; for in every work of art there is combination of formal-intelligible (*nāmavat*) and material-sensible (*rūpavat*) factors, the former corresponding to the "ear" as symbol of angelic understanding, the latter to the "eye" as symbol of sensational experience.[2] Works of art, in other words, are specifically human, distinguishable from natural objects as not merely sensible, but

desires?' 'Our desires are to eat food (*annādyakāmāḥ*).'" *Jaiminiya Upanishad Brāhmaṇa* I. 11. 1-3; and wherewith he feeds his children is the *Sāma-Veda*, that is precisely the ritual work of art (*śilpa-karma*) as distinguished from the *Ṛig-Veda*, which remains within as art in the artist (*śilpa*) until sung outwardly.

Food is all that nourishes the conscious self as living individual (*jiva*); works of art are foods in that men by them accomplish their "such and such desired ends." In that desires or appetites are here envisaged simply as *sine qua non* of existence, it is clear that the ends desired are the necessities of life as determined by the nature of the species—identical with all that every creature "milks" from Virāj according to its own specific virtue. The "morality" of desire and the "morality" of existence are thus one and the same: "I am the desire that is not counter to the law of heaven in living beings," *Bhagavad-Gītā* VII. 12. Man as an animal (*paśu*) has no other end in view than that of existence, and can subsist as animal on "bread alone" without recourse to works of art; but man as a person (*purusha*) has other ends before him (*purushārtha*) which are attainable only by means of works of art ordered accordingly.

Appetite (ordinate desire) as rightly understood above must not be confused with greed (inordinate desire). Appetite or Will (*kāma*) is the son of the Law of Heaven (*dharma*) begotten on Obedience (*śraddhā*); Greed (lobha) is the son of Arrogance (*dambha*) begotten on Well-being (*pushṭi*)—say the Purāṇas. The mothers being one or sister principles, the fathers contrary principles.

The case of him who is disgusted (*vairāgya*) and regards all appetites as evil—because *kāmaḥ saṁsāra-hetuḥ* ("Desire is the cause of transmigration") (*Mahābh.* III. 313. 98)—will be considered later in connection with the concept "Poverty." Note that this point of view, though one extraneous to a discussion of the place of art in *life*, is by no means exclusively Buddhist.

[1] "Re-minded," that is to say, "regenerated." This is conspicuously seen in the case of rites involving the notion of transubstantiation (*abhisambhava*), notably those of integration (*saṁskāra*) and initiation (*dikshā*). The duality of the ritual work of art is usually evident even when the motive is primarily practical, for example, *Pañchaviṁśa Brāh.* XXII. 10. 4, "The Viśvajit is metaphysically (*paroksha*) the rite (*vrata*), and thereby outwardly (*pratyaksha*) he obtains food (*anna*)."

[2] But every work of art has in the same way in its formal or expressive aspect an ideal meaning or value, and in its material aspect a practical application or value; the congruity of these aspects determining its perfection or beauty as a work of art. On the other hand, a mere utility, though made, is not a work of art—though *karma*, is not *śilpa-karma*; a bird's nest is not architecture, a bare statement is not poetry, a literal representation is no more than a plaster cast sculpture. It is within man's power to maintain his existence as an animal by means of mere utilities and bare statements of fact, as also to make use of works of art in the same way, exclusively from the pleasure-pain standpoint. But he who thus lives by means of utilities and facts alone, the

also intelligible, and from their angelic prototypes (*devaśilpāni*)[1] as not merely intelligible, but also sensible.[2]

It is true that amongst actually existing works of art men have attempted to distinguish limiting types, on the one hand purely intelligible, and on the other merely serviceable; calling the former "beautiful" (*rasavat*), the latter merely informative (*vyutpatti-mātra*) or merely useful (*prayojanavat*).[3] An actual existence (*sthiti*) of such limiting types is however impossible. In the first place, it is established by the definition itself that what is purely formal or intelligible is not also sensible, for this would contradict the predication of purity or mereness. Pure form (*śuddha nāma*) has only being (*bhāva*), not a becoming (*bhava*); explaining existence, but not existing, it can only be referred to, and not identified with the physical symbol.[4] Meaning cannot have

"practical" man who ignores the theoretical aspects of his existence, the labourer without art, is intellectually an outlaw (*avrata*) and suffers privation of being as a person (*purusha*). Not that the vegetative mode of being is despicable in itself, which is indeed the "foremost aspect" (*paraṁ rūpaṁ*) of the Self (*Maitrāyaṇi Up.* VI. 11), but that to ignore all other modes of being of the Self is "devilish" (*Chhānd. Up.* VIII. 8).

[1] *Ait. Brāh.* VI. 27. Observe that the *deva-śilpāni* (art in the artist) are to be distinguished from *śilpa-karmāṇi* (works of art) as *adhidaivata*, *paroksha*, from *adhyātma*, *pratyaksha*.

[2] Distinction of art from nature; for example, if we throw a stone, the stone remains a natural object, merely a thing, but if we set up a stone in the ground, and call it a *liṅga*, then the stone in connection with its support becomes an intelligible construction, a significant thing, a work of art.

[3] A division of "fine" from "applied" art has been made in India only in connection with literature and dancing, viz. in the distinction of *kāvya* (statement informed by *rasa*) from *itihāsa* (merely veridical statement), and of *nritya* (dance exhibiting a theme) from *nritta* (merely rhythmical movements). A broader distinction of pure or fine from applied or decorative art, and of beauty from use, has been drawn in Europe only within the last two centuries, before which time the terms "artist" and "artisan" designated only the professional maker, without regard to the kind of thing made. The new distinction belongs to the ideology of industrialism, seeming to explain and justify a division of craftsmen into artists on the one hand and labourers on the other: the human consequences so far as "labourer" and consumer are concerned were clearly enunciated by Ruskin in the stinging aphorism, "Industry without art is brutality," while the so-called "artist" of to-day is reduced to the position of the workman in the ivory tower, or as we should express it, that of the man who comes with his materials to paint a picture on the air (*ākāse rūpaṁ likheyya*, *Majjhima Nikāya* I. 127). Actually there never has been, and never can be agreement as to the point at which art ends and industry begins; the categories as defined being always opinionative (*vikalpita*) and without authority (*aprameya*).

[4] Note that "abstract form" (or better, "abstract shape") is not the same as "pure form." Abstract form is merely a general aspect deduced from particular aspects; pure form—*a priori* and *post factum* at the same time—is that by which or after which (*anu*) the aspect is induced, so as to exist before our eyes (*pratyaksha*).

position[1]; one and the same meaning can be referred to again and again by means of the appropriate symbols, which may be thought of as its stations (*avasthāna*), but do not confine it—" the picture is not in the colours "[2]—but in the " heart " (*hṛidaya*), viz. of the artist (*kāraka*) before the work is done, and of the spectator (*bhogin*) who when the work is done has grasped (*grah*) its reference.[3] And in the second place, only a natural (*sahaja*) object, the existence of which is its own end (*svārtha*), can be spoken of as unintelligible,[4] and merely sensible, accessible only to animal or estimative knowledge. Estimative knowledge, viz. of things as pleasant or unpleasant in themselves, is altogether different from intelligible knowledge, the animal, or man as animal, responding to sensation instinctively, not intelligently. The eye sees nothing but coloured surfaces, and has no other capacity: these surfaces

What is said above particularly with respect to works of art is stated more generally with respect to things of all kinds as follows: " Intelligibles and sensibles (*prajñā-mātrā, bhūta-mātrā*) are indivisibly connected, neither can exist apart. For from neither by itself could any aspect (*rūpa*) ensue. Nor is this aspect a multiplicity, but like a wheel with respect to its centre " (*Kaush. Up.* III. 8, summarized).

[1] To illustrate the sense of " meaning ": *deva* is a meaning, not a thing, *Brahman* is all-meaning, not all things.

[2] *Raṅge na vidyate chitraṁ . . . tattvam kyakshara-varjitaṁ* (*Laṅkāvatāra Sūtra* II. 117-118). Compare *Kaush. Up.* III. 8, *Na rūpaṁ vijijñāsīta rūpa-drashṭāraṁ vidyāt*, " It is not the aspect that one should seek to understand, but the seer of aspects." To paraphrase *Bṛih. Up.* II. 4. " Verily not for the love of art is art desirable, but for the sake of the Self."

Observe that if we define beauty (*rasa*) as the self or principle of art, as in the *Sāhitya Darpaṇa* I. 3, *Vākyam rasātmakaṁ kāvyam* (" Poetry is statement informed by beauty "), it follows in the same way that beauty cannot have position; and this is in fact asserted in the equation *raso rasāsvādanam* (" beauty subsists in the experience of beauty "). The work of art can be called *rasavat* (" beautiful ") only by ellipsis, and with considerable risk of lowering the level of reference from that of " intelligible beauty " to that of " sensible charm." We can nevertheless speak discreetly of works of art, and also of natural objects, as " beautiful " if we mean by this that they are perfect in their kind; for whatever is perfect in its kind (whether the kind be pleasing or not) reflects or refers to intelligible beauty, and may be regarded as an entry (*avataraṇa pravritaka*) or station (*avasthāna*) thereof, though in and by itself a veil (*āvaraṇa*).

[3] Thus in Rabindranath Tagore's " *Āmi chini go chini*," where beauty is personified by the name of Bideśini, *hṛidi-mājhe ākāle śunechhi tomāri gān*.

[4] The Absolute (Para Brahman, Aditi) is also, of course, unintelligible; but in another way, being neither an object, natural or artificial, nor even an intellectual form or idea. The Absolute, being *amūrta* (" *formless* "), *nirābhāsa* (" unmanifested "), not in any likeness, impossible to symbolize because not a form, does not fall to be considered here. The concept of art, even of art in the artist, cannot be extended to range beyond the level of reference implied in the symbol Apara (*lower*) Brahman. Īśvara as Viśvakarman, (" all-doing "), the Person in a likeness (*mūrta*), the source of image-bearing light (*bhā-rūpa, chitra-bhāsa*), whose intrinsic form (*svarūpa*) is the form of very different things (*viśvarūpa*).

have no meaning as such, but only are—" that there is an appearance of colour is simply that colour appears."[1]

So then the terms " pure art " or " fine art " and " applied art " or " useful art " have reference only to limiting concepts without separate existence in fact; every work of art is at one and the same time *nāmavat* and *rūpavat*. One and the same work of art can therefore be utilized from either point of view, or from one of many points of view: the Vedic *mantra* may for example be used as means to the integration of the self in the mode of metre, or may be regarded as a lullaby; a surgical instrument may be considered merely as beautiful, that is to say, at once expressing and adapted to its purpose, or may be considered simply as pleasing in colour or shape, or may be thought of merely as a means of relieving pain.

Works of art are good or bad in themselves and as such, not according to their themes or applications (*vastu, prayojana*); " of themes that may be chosen there is none in the world but can be endowed with the quality of beauty."[2] A cathedral (*vimāna*) is not as such more beautiful than an aeroplane, a *śānta* more than an *ugra* image, a hymn than a mathematical equation, nor Bhartṛihari's *Vairāgya Śataka* more than the *Śṛiṅgāra Śataka;* a well-made sword is not more beautiful than a well-made scalpel, though one is used to slay, the other to heal. Works of art are only good or bad, beautiful or ugly in themselves, to the extent that they are or are not well and truly made (*sukṛita*), that is, do or do not express, or do or do not serve their purpose (*kratvartha*); a work of art being " bad " or " poor " (*hīna*) which does not at one and the same time clearly express *and* well serve its purpose, whatever that may have been. Works that are bad in this sense will abound where men are either physically insensitive or intellectually inert.

The purposes to be served by and themes to be expressed in works of art are good or bad from other points of view, ethical and speculative; good or bad ethically according as the theme or purpose is noble (*puṇya*) or ignoble (*pāpa*), and good or bad intellectually according to the level of reference, metaphysical—angelic (*paroksha, adhidaivata*) or literal—individual (*pratyaksha, adhyātma*), universal or particular. These values are very commonly projected onto the work of art, which is then spoken of as if noble or ignoble, intellectual or sensual in itself.

[1] *Vaṇṇa va nibhā vaṇṇanibhā, Atthasālini*, 635, PTS. ed., p. 317.

[2] *Daśarūpa* IV. 9, *āpya vastu. . . tannāsti yanna rasabhāvam upaiti loke.*

is determined in different individuals or in different ages. This is all that concerns the historian of art, the student of stylistic sequences, who makes his business the demonstration and explanation of styles, without regard to human values.

All this, however, is to treat the work of art as a natural object, an end in itself, not as a thing made by and for man. If there are some artists who come with their colours and brushes to paint pictures on the air,[1] there are also on the one hand æsthetes, and on the other historians of art who take it for granted that works of art are always and necessarily pictures that have been painted on the air, whereto the artist has betaken himself in the pursuit of beauty or, what amounts to the same thing, in an attempted flight from life. To all of whom it may be replied that "Man is not emancipated from the task by merely shirking it, nor can he achieve perfection by mere abstention...they indeed who cook only for themselves are eaters of evil...it is by action that a man reaches his last goal...act therefore with due regard to the welfare of the world."[2] It is true that the artist, like other men in their respective vocations, should work for the good of the work itself, and not with regard to the ends, however noble or ignoble, to which the work is ordered; as artist he is not a philanthropist, but has his art which he is expected to practise, and for which he expects payment, the labourer being worthy of his hire. But we are now considering precisely the case of the artist who sets up to be his own patron, and thus assumes immediate and entire responsibility, not only for the work itself, but for the ends to which it is ordered and may be expected to promote; if this responsibility is wilfully ignored, the artist is not merely diminished in his humanity individually, but proceeds to extinction as species. "He who does not do his part to keep in motion the wheel that has been set agoing, whose life is loveless and whose playground is sensation, lives in vain."[3] The world has every right to enquire with respect to works of art, what are they about, and what for; and if the artist answers, about nothing and for nothing,

[1] A proverbial illustration of the futile; see for example, *Majjhima Nikāya* I. 127.

[2] *Bhagavad-Gītā* III. 4-20, summarized; here "action" and "cooking" are of course general concepts, to be taken in our context in the narrower sense of "making." Cf. *Parāśara* XI. 49: He who being in the order of the householder (*i.e.* within the social order, no longer a student, nor yet a hermit or total abandoner), still makes no gift whatever, is referred to as "one who never cooks for others."

[3] *Bhagavad-Gītā* III. 16. We are not at present considering his case, the hour of whose revulsion has come, and who *understands what it means* to escape from life, not from the world, but from himself; it may only be pointed out that such a man expects nothing from the world, he indeed supports the world, for whom the world can do nothing.

or about myself and for myself, the world owes him nothing. Offering stones for bread, he will be repaid in kind, and sooner or later buried without regret.[1]

Nor is the proper artist in fact at all of this kind; none is more justly angered than the artist who, when he presents the finished work to the patron or spectator *for whom it was made*, finds that only his skill (without which it had been presumption to make anything) or only his style (which he admits only when his attention is called to it, and then only as accident and not as essence in his work) is praised, while the theme of his work, to which he has literally devoted and given *himself*, is treated merely as a label attached to it. "I am not," he says in effect, "a performing animal, but also a person."[2] The Vedic *kavi* refers to his artistry as a skill exercised for the sake of the angels to whom the *mantras* are addressed; it is not himself that speaks, but Vāch-Sarasvatī through him; he is not a stylist, but an auditor, and a reporter; the *mantra* is very surely directed to an end beyond itself. The Vedic *kavi* is essentially Savitṛi,[3] and more than man (*apaurusheya*), but in that the Supernal Sun shines upon the world in the likeness of man,[4] man having his being as the counter-image in the mirror,[5] or, if the mirror be tarnished, suffers privation in fullness of being what he is, it follows, proceeding from whole to part, that man's powers in their perfection are reflections of his power; the human artist has his being in the likeness of the Solar *kavi*, or, if not, suffers privation in fullness of being as artist.[6] And this is seen in the relation of the artist to his

[1] The case of the artist who asserts that his work is not ordered to any end, but is its own meaning, is sufficiently disposed of by the *Sāhitya Darpaṇa* V, 1, Commentary: "or if not thus ordered to an end over and above the mere fact of expression, can only be compared to the ravings of a madman." If the work be such as he cannot understand, and therefore cannot use, the patron has a perfect right to demand a return of his money, or the spectator not to purchase.

[2] To expect the artist to be pleased when we admire his skill or style is to offer him a last offence; for in so doing we assume that his intention was to display his skill, or to make an exhibition of himself. If he is pleased, that is his human weakness, not his strength.

[3] *Ṛig-Veda* V. 81. 2.

[4] *Ait. Araṇ.* II. 2. 1, *abhyarchat purusharūpeṇa.*

[5] *Kaush. Up.* IV. 2. *āditye mahat. . . ādarśe pratirūpaḥ.*

[6] I am well aware, of course, that by certain rhetoricians the Vedas are excluded from the category *kāvya* (*Sāhitya Darpaṇa* I. 2, Comm.). But this is based merely on the ground that while "scripture" and "literature" are equally valid as means to the attainment of *purushārtha* in its four divisions, the "literary" way is the easier and pleasanter. As to this it need only be said that while Śruti may well be excluded from the category *belles letters*, just as Indian sculpture would fall outside the category "art" as nowadays understood, it would be absurd to assert that what the Vedic *kavis* have uttered is

work, the theme being precisely the angel whom he praises by his work, as *pūjaka* and *upachārin*.

II

It is the business of the artist to *know how things ought to be made* and to be able accordingly, as it is the business of the patron to know *what things ought to be made*, and of the consumer to know what things *have been well and truly made* and to be able to use them after their kind.[1] The individual artist is not indeed expected to find out for himself how things ought to be made, but he is expected to make this knowledge a part of himself, so that he acquires the habit (*ślishṭatva*, *anuśīlana*) of his art. No less than for the thinker or doer, there is for the artist a norm or ratio (*pramāṇa*), according to which, as subdivided into particular canons (*naya*, *vidhi*, *māna*) recorded (*smṛita*) in the technical books (*śilpa-śāstra*, *upaveda*) the work is to be done. Only such works as conform to these standards (*śāstra-māna*) are lovely (*ramya*) in the judgement of those who know (*vipaśchit*), individual taste (*tat lagnaṁ hṛit=ruchi*) being no criterion.[2]

There is indeed but one authority (*pramātṛi*) whose knowledge is universal (*viśva*) and innate (*sahaja*), not acquired by instruction or practice, that is, the Lord as Viśvakarman or Tvashṭṛi,[3] and in or with him (*sālokyavat*) those Comprehensors (*vidvān*, *sādhya*, *prabuddha*, *buddha*, etc.) whose omniscience (*sarvajñatva*) is as his, and who share

not, in a less restricted and technical sense of the word, *kāvya*, just as it would be absurd to say that the sculpture is not within the full and true meaning of the word *śilpa-karma*! Or is the Vāch-Sarasvatī of the Vedas less Muse than the Vāch-Sarasvatī of the *litterateur*? And if the "genius" of the *kavi* of the *Alaṁkāra-śāstras* is spoken of as a *pratibhā* or *śakti*, what are these but reflections of the powers intrinsic to the Solar Angel? We must accordingly regard the Vedic *kavi* as the archetype of every "poet" (within the root meaning of *poiein*, "to make"), and the Vedic *mantra* as the *exemplum* of all art.

[1] It may be repeated that while man universally is patron, artist, and consumer at once, man individually is only rarely patron, artist, and consumer with respect to any particular work of art. By way of further illustration take the case of the actor who functioning both as artist and consumer appreciates his own art (*āsvādo nartakasya na vāryate*, *Daśarūpa* IV. 51). A very different case is that of the actor who merely exhibits his own emotions, that is, merely behaving; here he is not an artist at all, nor is he producing a work of art that can be appreciated as such by himself or any one else.

[2] *Śukranītisāra* IV. 4. 106. The individual who has been rightly educated should not "know what he likes" but "like what he knows." The man who asserts "I do not know anything about art, but I know what I like" is governed by sensual appetite in the same sense as is he who says "I do not know what to think, but I know what I like thinking." or "I do not know what is right, but I know what I like doing."

[3] Or Śiva, *sarva-śilpa-pravartaka*, *Mahābh.* XII. 285. 14.

his absolute "skill in the field of art" (*śilpa-sthāna-kauśala*).[1] Criteria (*pramāṇāni*, pl.) known to others are necessarily limited and particular (*viśesha*); an innate knowledge of criteria being, as it were, divided amongst the angels (*deva, devatā*), whose nature (*bhāva*) is altogether intellectual, for "that is what it means to be an angel."[2] Now whereas "All the activities (*kriyāḥ*) of the angelic beings, whether at home in their own places, or abroad in the breaths of life[3] are intellectually emanated (*mānasī sṛishṭiḥ*), those of men are put forth by conscious effort (*yatnatas*); therefore it is that the works to be done (*kārya-kriyāḥ*) by men are defined in detail (*lakshaṇābhihitāḥ*).[4] Man's works of art, in other words, are properly deduced only when they are made in imitation (*anukṛiti*) of the angelic arts (*deva-śilpāni*).[5] It follows indeed directly from the principle "As above, so below" *amushya lokasyāyaṁ loko 'nurūpaḥ*[6] that works of art (*śilpa-karmāṇi*) can only be regarded as conceived in accordance with the law of heaven (*ṛitaprajātāni*) and as well and truly made (*sukṛitāni*, as the works of the Ṛibhus are said to be, and as before defined, "beautiful") when they are made after (*anu*) the angelic prototypes, which are intellectually begotten in the revolution (*pravartana*) of the Year (*saṁvatsara*, Prajāpati); for example, "the Year is endless; its two ends are Winter and Spring; after (*anu*) this it is that the two ends of a village are united, after this it is that the two ends of a necklet meet."[7]

[1] *Abhidharmakośa* II. 71-72 and VIII. 40; see also discussion in my *Transformation of Nature in Art*, Cambridge, 1933, Note 74.

[2] Saṅkarāchārya on *Ait. Up.* III. 14: "In that the angels are wonted to the use of (*grahaṇa-priyāḥ*) metaphysical notions (*paroksha-nāmāni*), thereby it is that they are angels (*yasmād devāḥ*)"—that is to say, in that theirs is the habit of first principles. [Śaṅkara's commentary does not seem to bear this interpretation. *Yasmāt devāḥ parokshapriyāḥ*—this is the construction. Cf. Comm.—on *Bṛih. Up.* IV. 2. 2.—*Ed.*] Cf. Chhānd. Up. VIII. 12. 5. "Intellect is his angelic eye."

[3] In the text, *gṛiheshu pavaneshu cha*: a gloss now embodied in the text explains, "That is, put forth according to their natures and every human nature"—correctly, for "all these angels are in me (*mayyetās sarvā devatāḥ*)," *Jaiminiya Up.-Brāh.* I. 14. 2.

[4] *Nāṭya Śāstra* II. 5.

[5] *Ait. Brāh.* VI. 27. It will be understood of course that the angelic arts (*deva-śilpāni*) are not like human works of art (*śilpa-karmāṇi*) actually, but only metaphorically made with hands; the angelic arts are inwardly knowable intellectual forms awaiting their embodiment in manufactured things. As examples of things made by man after the heavenly patterns are cited "a clay elephant, a brazen object, a garment, a gold object, a mule chariot."

[6] *Ait. Brāh.* VII. 2.

[7] *Jaiminiya Up.-Brāh.* I. 35. The cases cited are elementary; but the student of ancient Indian symbolism and iconography (whether in ancient iconography or surviving folk art)

It is indeed as aforesaid precisely the willed embodiment of a foreknown form or pattern in the work of art that removes it from the category of "natural object" and makes it artificial (*kṛitrima*), that is to say, humane (*mānusha*); not that natural objects have not also their forms, but that these are not foreknown by the artist, nor has he any part in the creation of the natural object. There are however two distinct aspects of the act of art, according as the artist proceeds from universal to particular, or from particular to universal. In the first case the intellectually known form precedes, and operation follows—*dhyātvā kuryāt*; in the second, a thing is first perceived sensibly, then the intellect at work in the heart discovers the corresponding form, this form in turn being, as art in the artist, foreknown and precedent with respect to operation—*dṛishṭvā dhyāyet, dhyātvā kuryāt*. In modern terms the cases are spoken of as his who works from imagination, and his who works from nature or from memory. In the first case the artist forms material symbols directly after angelic images, which are not things; in the second he takes existing things out of their sense, and sacrificing their sensible appeal, transforms them. The artistry of the Vedic *mantras*, which are the cause of the becoming of things in their kind,[1] is of the first sort; that of the actual sacrifice, where things are offered up and returned to their source, of the second—*jo ha vai evaṁvit, sa hi suvar gachchhati*.[2]

The normal procedure of the Indian imager (*pratimā-kāraka*) is of the first kind, and this applies also to the case of the poet and other artists within narrower categories. The details of the angelic prototypes are remembered (*smṛita*) for the imager's guidance in the canonical treatises, and incidentally to be found elsewhere wherever the angels or their houses, vehicles, thrones, weapons, or other possessions are described.

will find in the *prathas* "lotus," "wheel," etc., more detailed correspondences. Notable analogies are: that of the macrocosmic warp and woof, thought of as a veil or garment (*vavri, vastra*) comparable to the tissues woven on human looms; that of the solar chariot (*ratha*), of which the wheels are heaven and earth, with vehicles employed on earth; and that of the axis of the universe—the axle-tree of the aforesaid wheels—that pillars apart (*viskambhayat*) heaven and earth as a roof is supported here.

[1] Saṅkarāchārya on *Vedānta Sūtra* I. 1. 3. (Veda as *paribhāga-hetu*).

[2] *Jaiminīya Up.-Brāh.* III. 14; cf. *Bṛih. Up.* I. 4. 16, *sa yajjuhoti yadyajate tena devānāṁ lokaḥ* (*bhavati*); and *Śukranītisāra* IV. 4. 74, *devānāṁ pratibimbāni kuryāchchhreyaskarāṇi svargyāṇi mānavādīnām asvargyāṇyaśubhāni cha*. By "going to" or "becoming" the angelic world we understand, of course, a reintegration (*saṁskaraṇa*) in the intellectual mode of being (*manomaya*), as in *Ait. Brāh.* VI. 27, where he who imitates (*anukṛi*) the *deva-śilpāni* is said to be reintegrated (*ātmānaṁ saṁskurute*) in the metric mode (*chhandomaya*).

This does not mean that the artist's knowledge must be got only directly from texts actually written down or recited, though these have been, and are still resorted to; it may as well be gained from instruction (*upadeśa*) and in practice (*abhyāsa*). The master (*āchārya*) stands in relation to the pupil as *guru* to *śishya*, and so professional men following one another in pupillary succession (*guru-paramparā*) learn to work "according to their craft (*śilpānurūpeṇa*).[1] At the same time the possibility of a direct access to the highest source of knowledge—Vāch-Sarasvatī, or the Lord through whose creative emanation of image-bearing light (*bhā-rūpa*, *chitra-bhāsa*)[2] all possibilities are realized—is by no means excluded. The creative light (*kārayitrī pratibhā*) or power (*śakti*) in the poet himself may be either natural (*sahajā*), acquired (*āhāryā*) or learnt (*aupadeśikā*); in the former case the poet is "Sarasvatī's" (*sārasvata*).[3]

The artist's perception of angelic prototypes is spoken of in many different ways: it may be revealed to him in sleep; he may visit an angelic world and there take note of what he sees (whether the aspect of a given angel, or that of the angelic architecture, or that of the heavenly song and dance), or Viśvakarman may be said to operate through him;[4] these metaphors all implying an awareness at levels of reference superior to that of observation and deliberation—levels apparently objective, but in reality "within you," *antarhṛidayākāśe*, for as before cited, "all these angels are in me."

The most perspicuous accounts of artistic "invention" (*anuvitti*) are to be found in the *Ṛig-Veda*, where we are told time and again how and where the poet, whose incantations (*mantra*) are the cause of the becoming of things in their variety, finds (*anuvid*) his words and measures. Foremost and archetype of these is the Solar Angel (Savitṛi)

[1] *Jātaka* VI. 332.

[2] *Maitrāyaṇī Up.* VI. 4; *Ṛig-Veda* VI. 10. 3.

[3] *Kāvya-mīmāṁsā*, Ch. 2. Cf. the various discussions of *kāvyahetu*, e.g. in Kane, *Sāhitya Darpaṇa*, ed. 2, p. cxliv, and De, *Sanskrit Poetics*.

An example of a *sārasvata* poet might be cited in Tirujñānasambandha-svāmi; innate poetic genius (*sahajā kārayitrī pratibhā*) is however more fully represented in the Vedic *kavi*, *sārasvata* in that his access to Sarasvatī is immediate. In any case an innate genius must be one thought of as *apūrva* ("original"). The Indian conception of genius however differs from the modern notion as not implying a disregard of norm (*pramāṇa*), but on the contrary a perfect knowledge of all norms, and corresponding virtuosity.

[4] E.g. *Mahāvaṁsa* XXVII, 9-20, *dibbavimāna* . . . *taddālekhyaṁ lekhayitvā* . . . *ālekhyatulam kāresi*.

in that he reveals (*pratimuñchate*) the aspects of all things (*viśva-rūpāṇi*).[1] Others, angels, prophets, or patriarchs, co-creators in his likeness, " ward the footprints of the law of heaven and in the innermost (*guhā*) are pregnant of the ultimate ideas (*parāṇi nāmāni*),"[2] " then what was best and flawless in them, implanted in the innermost (*guhā nihitam*), that by their love was shown forth."[3] " In the innermost," literally " hidden," that is, immanent in the hollow of the lotus of the heart, where only are to be realized all the possibilities of our being, " both what is ours now, and what is not yet ours."[4] It is in the heart (*hṛit*) that Wisdom (Vāch-Sarasvatī) is seen or heard (*dṛiś, śru*), in the heart that the swift instigations of the intellect are fashioned, or thought is formulated, " as a carpenter hews wood,"[5] and " even as Tvashṭṛi with his axe wrought the angelic chalices, even so do ye that are Comprehensors of the hidden footprint whet those chisels wherewith ye carve the vessels of undying life."[6]

The æsthetic process, the making (*karma*, Greek *poesis*) of things, is thus clearly conceived in its two essential aspects, on the one hand as the exercise of a theoretical power (*mantra-śakti*), and on the other of a practical power (*utsāha-śakti*). The procedure of the artist is defined accordingly: " The imager (*pratimā-kāraka*) should prepare the images that are to be used in temples by means of the visual-formulæ (*dhyāna*) that are proper to the angels (*svārādhya-devatā*) whose are the images to be made. It is for the successful attainment of visual-formulation (*dhyāna-yoga*) that the lineaments (*lakshaṇa*) of images are recorded (*smṛita*), so that the mortal imager may be expert in visual formulation (*dhyāna-rata*), for it is thus and in no other way, least of all (*va khalu*) with a model before his eyes (*pratyaksha*) that he can accomplish his

[1] *Ṛig-Veda* V. 81. 2 and *Nirukta* XII. 13.

[2] *Ṛig-Veda* X. 5. 2

[3] *Ibid.* X. 71. 1.

[4] *Chhānd. Up.* VIII. 1. 1-3. *Guhānihitaṁ* in *Ṛig-Veda* X. 71. 1 = *hṛidā* in the same laud, verse 8, and *hṛidaye āhitaṁ* in *Ṛig-Veda* VI. 9. 6. " What is ours here," that is, human goods (*mānusha vitta*) known sensibly (*chakshushā*), " what is not ours here," that is, angelic goods (*daiva vitta*) known intelligibly (*śrotreṇa*), as in *Bṛih. Up.* I. 4. 17. Cf. *āviḥ...cha guhā vasūni*, *Ṛig-Veda* X. 54. 5.

" Heart " (*hṛit, hṛidaya*) corresponds to Islamic *qalb*, and partly to Christian " soul," better to " within you."

[5] *Ṛig-Veda* X. 71. 8, *hṛidā tashṭeshu manasaḥ javeshu yat*; *Ṛig-Veda* III. 38. 1, *abhi tashṭeshu dīdhayā manīshām*, and Sāyaṇa's comment, *yathā tashṭā takshaṇena kāshṭhaṁ saṁskaroti*. Note that Vedic *dhī* and *dhita* correspond to Aupanishada and Yoga *dhyai* and *dhyāta*.

[6] *Ṛig-Veda* X. 53. 9-10.

task."[1] And so, to summarize the injunctions which are scattered through the books in which are collected the prescriptions for images, the imager is required, after emptying his heart of all extraneous interests, to visualize within himself (*antarhṛidayākāśe*) an intelligible image (*jñānasattva-rūpa*), to identify himself therewith (*tadātmānaṁ dhyāyet* or *bhāvayet*), and holding this image as long as may be necessary (*evaṁ rūpaṁ yāvad ichchhati tāvad vibhāvayet*), then only to proceed to the work of embodiment in stone, metal, or pigment—*dhyātvā kuryāt*. In case (which is unusual) he works from a sketch, that is to say, from a visual rather than a verbal *sādhana* or *dhyāna*, the principle remains the same; for here he works actually from a mental image evoked in himself according to the sketch, and not from the sketch directly.

As we have seen above, the resort to a living model accessible to observation (*pratyaksha*) is prohibited, and the representation of "men etc." that is of "nature" is dismissed as "not heavenward leading." Let us not forget that the problem (*kartavya*) before the artist is that of communicating to others a given idea, and though this can only be done by means of sensible symbols—perceptible shapes or audible sounds—it is evidently essential that these shapes or sounds be such as can be understood, and not merely seen or heard, by the patron or spectator who rightly expects to be able to understand and make use of the work of art to procure those ends to which it was ordered on his behalf.[2] Now the living model as natural (*sahaja*) object and end in itself (*svārtha*) is not a symbol, and has no meaning, its appeal is merely sensational and affecting, our reaction being either of pleasure or pain, and not disinterested.[3] To the extent that the work of art is "true to nature," and

[1] *Sukranitisāra* IV. 4. 70-71. *Dhyāna dhyāna-mantra, sādhana, i.e.* the canonical prescription required to be realized in the image to be made; the *dhyānas* of the artist are the same as those made use of in "subtle" (*sūkshma*) worship where the form is not embodied in a material symbol. *Svārādhya-devatā* is *adhidaivata*, in other words, *paroksha*; it is well known that "the angels are wonted to the supersensuous (*paroksha-priyāḥ*) and mislike the sensible (*pratyaksha-dvishaḥ*"), *Bṛih.* IV. 2. 2.

[2] "The work of art can only nourish the spectator, he can only have delight in it, when he is not cut off from its meaning" (*Daśarūpa* IV. 52).

[3] Absence of meaning is predicated equally whether we consider the object in its individual, specific, or generic aspect. By "generic aspect" we mean one idealized or conventionalized, an abstracted form. The genus has no more meaning than the species, the species than the specimen; the notion of genus is derived from experience, and its use is to summarize, not to explain experience. An elimination of individual or specific details, whether arrived at deliberately, or as in memory drawing by a resort to forgetfulness of aspects in which we are not interested, can never lead us to the forms of things, but merely to a simplified or selected aspect adequate to the given classification or congruent

the more its appearance approximates to that of the natural model, the more what was true of the object will be true of the work; until finally the work becomes "illusionistic" or "very like" (*susadṛiśa*), and at this point we are suddenly awakened to the fact of its insignificance (*anarthatva*). As the natural object as such is clearly a far better thing than any shadow or imitation of it that can be made, we realize that the only use of the illusionistic work is to serve as substitute for the natural object in the absence of the latter, viz. as a means of consolation in longing (*utkaṇṭhā-vinodana*)[1]; our attachment to the work is then strictly speaking a fetishism or idolatry, a worship of "nature." At the same time, in so far as the work is merely informative as to the manner in which a certain man or other thing presents itself to the eye's intrinsic faculty (*māṁsa-chakshus*), it is not properly a work of art, but merely a convenience or utility.[2]

It is only because in sculpture or painting the language is visual rather than aural, and a fully developed (*vyakta*) image of an angel or other meaning, therefore, more like a man or a tree than are the words *purusha* or *vanaspati*, that the notion has arisen that it is the primary function or nature of these arts to reproduce the appearances of things. This indeed has never been clearly asserted in India, but has been constantly denied; nevertheless there can be found allusions to sculpture or painting as intriguing deceptions,[3] and this seems to imply at least a popular view of the art as imitative in kind. That a popular interest must have been felt in the representative aspects of art is further illustrated by the fact that a preference for colour is always ascribed to the laymen, a preference for line to the connoisseur, while in more than one

with our taste. In other words, "idealistic" art and "ideal" art are two very different things: simplification is not transformation (*parāvṛitti*).

It is true that a natural object *can* be used as a symbol: for example, when a natural stone is set up and called a *liṅga*, or when an actual lotus leaf is laid on the fire altar. But the symbolic value thus projected upon the natural object has nothing to do with its individual idiosyncrasy, to which our attention is chiefly directed in a "drawing from life"; and in most cases we can make our meaning very much clearer by employing a symbol expressly designed *ad hoc*.

[1] *Mālatīmādhava* I. 33. 9-10.

[2] It is by no means to be understood that a reasonable attachment to things as they are in themselves, or a proper use of utilities is sinful; on the contrary, as already pointed out, no distinction can be drawn between the morality of existence itself, and the morality of ordinate desires. All that is asserted is the evident fact that even an ordinate attachment to things as they are in themselves is *asvargya*, not heavenward leading, but tends to a coming back again, *punar āvṛitti*.

[3] *Maitrāyaṇī Up.* IV. 2, *mithyā-manoramam*, with reference to painted walls.

passage the *vidūshaka* is referred to " stumbling over " the represented relievo.[1] Actually to think of likeness to anything as a criterion of excellence in sculpture or painting would be the same as to think of onomatopoetic words as superior to others in literature. If because of our human preoccupation with the facts of experience, and being *pratyaksha-priya*, we should make use only of onomatopoetic words in our communications, these communications would be restricted to the range of such as animals are able to make to one another by means of grunts and whines; accepting only those words which are made in the likeness of things, we should have none with which to make those references which are not to things but to meanings.

The considerations outlined above have determined the Muhammadan interdiction of representative art, as a thing giving the appearance and not the reality of life; in making such representations, man is working, not like the Divine Architect from within outwards, not with significant forms (*nāmāni*), but only with aspects, and in reducing these from life to likeness imposes on them a privation of their proper being, which is one informed by the spirit (*rūḥ, prāṇa*) of life. From the Hindu, Buddhist, or Jaina monastic point of view, and that of such teachers as Śukrāchārya (who expresses the consensus of authority) representative art is condemned as such more on account of its worldly theme than on strictly theological grounds. Finally, the modern critic in agreement with Hindu theory condemns representative art *as art*, because of its informative (*vyutpatti-mātra*) character, or because the spectator regards it primarily from the standpoint of its affective associations and sensationally. It is true that the work of art which takes the natural object or human theme for its starting point need not be merely informative or imitative in itself[2]; nevertheless, in spite of ourselves, it is only too easy

[1] *Śakuntalā* VI. 13-14 in Kale's edition, apparently with reference to the exuberant forms of beautiful women.

[2] The Chh'an-Zen art of the Far East provides the best illustration of an art which takes " nature " as its starting point, and yet is not a representation of, but a transformation of nature. The Sung painter indeed " studies " nature; but this study is not an observation, but an absorption, a *dhyāna* (*chh'an*) resulting in the discovery of a pure form, not like the thing as it is in itself, but like the image of the thing that is in the thing; the idea of the thing, and not the object itself, being the " model " to which the painter works. Even in the case of Indian representations of " men etc.", it will be found that though the artist is working in presence of the thing, he nevertheless resorts to *dhyāna*; see for example *Śukranītisāra* VII. 73-74, where the image of a horse is to be made from a horse actually seen, and yet the artist is required to form a mental image in *dhyāna*, and also *Mālavikāgnimitra* II. 2, where defect in portraiture is attributed not to lack of observation, but to imperfect identification (*śithila samādhi*).

to be curious of and seduced by the individual and accidental aspects of the things before us, and thus to be drawn away by our affections from the vision of pure form. The possibility of such distractions is avoided by the imager who, emptying his mind of all other content, proceeds to work directly from an inwardly known image; and similarly in the case where the form is not evoked by the craftsman individually, but is handed down from generation to generation in the collective consciousness of the craft.[1] All this is borne out in the character of the actual art, the *vyakta* (developed and "anthropomorphic") image (*mūrti*) being no more realistic in principle than the *avyakta* (undeveloped or "abstract") diagram (*yantra*) which is ordered to the same ends. The Hindu image of an angel, or Hindu ancestral image, is not in fact made as if to function biologically, and cannot be judged as if it were so made. The plastic image has no more occasion to counterfeit a man than has the verbal image; and if for instance the latter may have a thousand arms or therio-morphic elements, so may the former.[2] It need hardly be added that it is taken for granted that those who look at earthen images "do not serve (*na abhyarch*) the clay as such (*mṛitsaṁjña*), but without regard thereof (*anādṛitya*) honour (*nam*) the deathless principles referred to (*amarasaṁjña*) in the earthen images (*mṛiṇmaya pratikṛiti*)."[3]

"Portraiture" in Hindu art falls to be considered from two different points of view, first, that of the ancestral effigy, and second, that of the likeness of a still living person. The principles involved are more divergent than might at first sight appear. The ancestral effigy is not in fact a "portrait" in the accepted sense of the word, it is not the likeness of a mortal, but the image of an angel (*deva*) or archetypal meaning (*nāma*). For of the deceased we say that he has become an angel (*deva*), or attained angelic nature (*devatva*); and that it is an idea (*nāma*) that

[1] In this way the intellectual element has been preserved in the traditional minor and folk arts of the villages until to-day, while the major arts in the *bourgeois* environment have been denatured.

[2] Needless to observe that our arithmetical ability to count up arms, or to recognize theriomorphic elements in the artist's vocabulary, is not an æsthetic capacity. The *lakshaṇas* required are an integral part of the artist's problem (*kārya, kartavya*), presented to him *a priori*; what we judge in him is not the problem, but the solution.

[3] *Divyāvadāna*, Ch. XXVI. These are also the principles underlying Christian iconolatry; cf. the *Hermeneia* of Athos, 445. "In no wise honour we the colours or the art, but the archetype of Christ, who is in heaven. For as Basilius says, the honouring of the image passes over to the prototype."

remains when a man dies.[1] The nature of the angel or idea will be such as the man's own thoughts and works have been, and so the man is represented not as he was seen on earth, but as he was in himself, and is now transubstantiated (*abhisambhūta*). An actual "likeness" of the deceased could only be desired by those most attached to what was mortal in him, and would be persuaded that it is precisely thus that he is now.[2] Hence we do not "recognize" the individual in the effigy; in the *Pratimā-nāṭaka*, Bharata does not recognize the effigies of his own parents, and in the presence of Javanese or Cambodian sculpture we are to-day in just the same way unable to distinguish, unless by an inscription, between a royal effigy and the image of a deity. The angel, whether *ājānaja* or *karma-deva*, is represented as at home (*gṛihe*, *gṛihastha*) and respirated (*apāna*), not as abroad in the breaths of life (*prāṇeshu, pavaneshu*); that is to say, formally (*nāmika*, Lat. *formaliter*), not as if embodied (*śārīraka*) in a life (*āyus, asu*), but in the manufactured image (*kṛitrima rūpa*).

The representation of living persons according to their factual likeness (*yathā-vesha-saṁsthānākārah*), and where the possibility of recognition is a *sine qua non*, belongs entirely to the domain of "worldly" or "fashionable" (*nāgara*) painting, and has always an erotic (*śriṅgāravat*) application (*prayojana*)[3]; and furthermore, always an avocation or accomplishment, attributed to princes and other cultured men, rather

[1] *Devabhūyaṁ gata*, and *devatvaṁ* (or *devītvaṁ*) *prāpta*, etc., are common expressions: in the *Jaiminiya Up.-Brāh.* III. 9, we find *devatām anusambhavati*. For *nāma* is that which remains, and is "without end," when a man dies, see *Bṛih. Up.* III. 2. 12.

[2] Portraiture in the accepted sense is history. History has its legitimate practical values; the Indian attitude, apart from some exceptions, has been to let the dead bury the dead; what India valued more than life was to preserve the great tradition of life, and not the names of those by whom it was handed down. We cannot imagine what it means to be interested in biography: our greatest "authors" are either anonymous, or impersonally named, and none lays claim to originality, but rather regards himself as merely an exponent. It has been well said that "Portraiture belongs to civilizations that fear death. Individual likeness is not wanted where it suffices for the type to continue" (Kramrisch, *Indian Sculpture*, p. 134); in fact, it was not until the production of works of art had practically ceased that it occurred to men to protect them in museums, which can only be compared to tombs, and not until folk-song and folk-lore were seen to be actually in imminent danger of death that it occurred to men to preserve their lifeless images on the dead pages of books. It was not until men began to fear that living books might be no more, that the scriptures were written down.

[3] The portraits of donors to be introduced in their donations (as for example described in *Mañjuśrīmūlakalpa*, printed text, p. 69) are to be excepted from this generalization, but even here the purpose is individual, and in this sense profane.

than to the professional *śilpin* and *pratimā-kāraka*.[1] If portraiture of this kind is called *asvargya*, not heavenward leading, that is not so much a prohibition, as by way of pointing out the undeniable distinction of what is mortal (*martya*) and individual (*adhyātma*) in kind, from what is angelic (*adhidaivata*) and heavenward leading (*svargya*).[2] At the same time, even in this kind of portraiture, it is the concept of the type discovered in the individual that really governs the representation: the portrait of a queen made for a lovesick king is given all the lineaments of a *padminī*, and yet thought of as a good likeness (*susadriśa*)[3]; and even when the portrait of an animal is required, the artist is expected to visualize (*dhyai*) the form in agreement with pre-established canonical proportions.[4]

It is in connection with an unsuccessful portrait, indeed, that we find allusion made to the fundamental cause of an artist's failure; this failure is attributed neither to lack of skill nor to lack of observation, but to a lax realization or "slackened integration" (*śithila samādhi*)[5]; and elsewhere in connection with the drama, imperfections of acting are attributed not to lack of skill or charm, but to the actor's "empty-heartedness" (*śūnya-hṛidayatā*)[6] which is tantamount to calling the production formless, in that the inwardly known form after which the gesture follows is a form known only within, as art in the artist. The use of the terms *samādhi*, *hṛidaya*, is significant when we realize, as we must have realized, that the practice of art is a discipline (*yoga*) beginning with attention (*dhāraṇā*),[7] consummated in self-identification (*samādhi*), viz. with the object or theme of contemplation, and eventuating in skill of operation (*kauśala*).[8]

If we have so far considered only the case of what are commonly known as the major arts, let us not forget that Śaṅkarāchārya is reported

[1] For the four classes of painting (*satya*, *vaiṇika*, *nāgara*, *miśra*) see *Vishṇu-dharmottara*, III. 41. On the characteristics and functions of "fashionable" painting, see my "Nāgara Painting," in *Rūpam*, Nos. 37, 38.

[2] *Śukranītisāra* IV. 4. 76.

[3] *Vikrama-charitra*, story of Nanda and his queen Bhānumatī.

[4] *Śukranītisāra* VII. 73-74.

[5] *Mālavikāgnimitra* II. 2. In medical usage, *śithila samādhi* is *post coitum* lassitude, a state of disintegration (*visraṁsana*), cf. *Ait. Āraṇ.* III. 2. 6.

[6] *Priyadarśikā* III. and *Vikramorvaśī* II (introductory stanzas).

[7] Cf. *sādhāraṇya* as prerequisite to *rasāsvādana* on the part of the spectator.

[8] Art is a *yoga* of course only from the human point of view, in which there is presumed a duality; integrity being from this point of view "restored" in *samādhi*, though from the standpoint of the Self that cannot be thought of as restored which has never been infringed. Accordingly in the Comprehensor (*vidvān*), who has transcended human modes

to have said, " I have learnt concentration (*samādhi*) from the maker of arrows." Not only in fact does the ordinary workman, weaver or potter, work devotedly, but—though he may not practise *yoga* in the formal sense of sitting in *padmāsana* etc.—always form mental images, which he remembers from generation to generation and is so far identified with that he has them always at his ready command, at his fingers' ends, without need for conscious " designing "; and in that he works thus above the level of conscious observation, his capacity as artist by far exceeds what would be his capacity as individual " designer." At the same time his work remains comprehensible, and therefore nourishing and beautiful in the eyes of all those who like himself still live according to the immemorial tradition (*sanātana dharma*), or in other words according to the pattern of the Year (*saṁvatsara*). Pre-eminently of this kind, for example, are on the one hand those unlettered and obscure women of the villages, whose drawings executed in rice-powder and with the finger-brush, in connection with domestic and popular festas (*vrata*) represent an art of almost pure form and almost purely intellectual significance[1]; and on the other, those trained and learned architects (*sthapati*) of Southern India to whom rich tradesmen still entrust the building of cathedrals (*vimāna*), and who for their part lay claim to an equality with Brāhmaṇas in priestly function, being in fact the modern representatives of the Vedic *rathakāra*. Artists of this rank have long since disappeared from Europe, and are becoming rarer every day in India—those who do not understand, and therefore cannot use such arts as these, refusing, as the case may be, to " waste their time " or " waste their money " on them.

of being, the *śilpa-sthāna-kauśala* is not attributed but essential, and thus *no yogyā kṛtā* (*Lalitavistara*, Lefmann's ed., p. 156, 1. 1); and in the last analysis, and where no work is done because there are no ends to be attained, *śilpa* becomes *līlā*, *śilpāni āyavaḥ*.

While we are on the way we are not there. In the meantime, to work at his art, having always in view the good of the work to be done, and not the advantage to be derived from it (for the artist as for all others, *karmaṇyevādhikāraste mā phaleshu*, *Bhagavad-Gītā* II, 47) is the specific *karma-yoga* of the artist, his way (*mārga*) to *sāyujya* with the Lord in his aspect as *nirmāṇa-kāraka*. In other words, the *śilpin's ishṭā devatā* is Viśvakarman.

[1] "*Ālpanā*" drawings are outstanding examples of the type "fine art" within the customary definitions of the category; being at once exalted in theme, astonishing in virtuosity, and practically speaking useless.

For examples see A. N. Tagore, *Bāṅglār Vrata*, Calcutta (n.d., but before 1920). Attention may be called to Plate 99, illustrating two representations of the "House of the Sun"; here the theme is purely metaphysical, and can only be translated into symbols of verbal understanding when reference is made to the Vedic notions of the Supernal Sun as *aja ekapad*, and as moving in a ship or swing (*preṅkha*) which is the vehicle of Life over the cosmic waters (*āpaḥ*) that are the source (*yoni*) of his omnipotence (*mahiman*).

III

We have so far spoken of art mainly as utilitarian (*vyāpāra-mātra*) on the one hand and significant (*abhidhā-lakshya*) on the other; as at once means of existence in the vegetative (*annamaya*) mode of being, and of reintegration in the intellectual (*manomaya*) mode of being. We have seen that the forms of things to be made are ordered (*prativihita*) to these ends, and that the knowledge of their right determination (*pramāṇa*) proceeds from a condition of consciousness in which the artist is fully identified with (*samādhi*, *tadākāratā*, etc.) the theme of the work to be done. With respect to the consumer (*bhogin*) and spectator (*drashṭṛi*), it has been made clear that he only can make an adequate and intelligent use of the work of art who understands its determination; and finally that which distinguishes the work of art from a natural object or mere behaviour is precisely its lucidity or expressiveness, its intellectual application.

But this is not all. It is agreed that works of art are for the competent spectator, if not causes of, nor ordered to,[1] at least occasions or sources (*nisyanda*)[2] of an unrelated delight (*ānanda*), transcendent with respect to any or all of the specific pleasures or meanings subserved or conveyed by the work itself. That is the delight felt when the ideal beauty (*rasa*) of the work is seen or tasted (*svādyate*) in "pure æsthetic experience." This delight or tasting of ideal beauty (*rasāsvādana*), though void of contact with intelligible things (*vedyāntara-sparśaśūnya*), is in the intellectual-ecstatic order of being (*ānanda-chinmaya*), transcendental (*lokottara*), indivisible (*akhaṇḍa*), self-manifested (*svaprakāśa*), like a flash of lightning (*chamatkāra*), the very twin of the tasting of Brahman (*Brahmasvāda-sahodara*).[3] Nor is this experience in any way determined by ethical qualities of any kind predicated with respect to the theme.[4] On the other hand, just as the artist starts from the theme or purpose of the work, and must be identified with its meaning before

[1] *Daśarūpa* IV. 47. *atatparatva*. We may call beauty the ultimate meaning (*paramārtha*) of the work; but only in the same sense that we can speak of death as the ultimate meaning of life, for it would be a contradiction in terms to speak of either art or life as *ordered* to the denial of itself. Works of art and things done are necessarily willed to proximate ends (as is well seen in the case of the Vedic sacrifice and all worship): if an ultimate "end" is accomplished in him who understands (*rasika*, *ya evaṁ vidvān*), that befalls not in the pursuit of any end, but by a disordering of anything to any end, as an act of understanding, not of will.

[2] *Daśarūpa* I. 6.

[3] *Sāhitya Darpaṇa* III. 2-3.

[4] *Daśarūpa* IV. 90.

he can express it, so conversely the spectator may not attain to the vision of beauty without respect to the theme, but only by way of an ideal sympathy (*vāsanā*) with and consent (*sādhāraṇya*) to the passions animated in the theme,[1] only by way of an imaginative integration of oneself with the meaning of the theme (*arthabhāvanā*).[2] The vision of beauty is thus an act of pure contemplation, not in the absence of any object of contemplation, but in conscious identification with the object of contemplation. Just as the concept of the artist is most perfectly and only perfectly realized in the person of the Divine Architect, so the concept of the spectator is most perfectly and only perfectly realized in the Self, one Person, single Self, who at one and the same time and for ever sees all things (*viśvam abhichashṭe*), seeing without duality (*drashṭādvaita*), verily seeing though he does not look (*paśyan vai tanna paśyati*), and whose intrinsic aspect (*svarūpa*) is the single image of all things (*viśvarūpa, rūpaṁ rupaṁ pratirūpa*). His is the perfection of æsthetic contemplation who as " very Self surveys the variegated world-picture as nothing other than the Self depicted on the mighty canvas of the Self, and takes a great delight therein "[3]—that is the consummation equally of art and understanding. That is the pure being of the Self, in the identity of its essence and its nature, within you, where there are neither works to be done nor thought to be communicated, but a simple and delighted understanding; one perfection, though reflected brokenly in all things perfect in their kind, one image-bearing light, though refracted in all things well and truly made.

IV

Thus art reflects and answers to man's every need, whether of affirmation (*pravṛitti*) or denial (*nivṛitti*), being no less for the spectator than the artist a way (*mārga*), one way amongst the " many paths that Agni knows." Now with respect to every way, the means and their fruit must be understood; not merely explicitly and theoretically, but also implicitly and actually, for the way is of no use to him who will

[1] *Sāhitya Darpaṇa* III. 9, *na jāyate tadāsvādo vinā ratyādivāsanām*, and Dharmadatta, *nirvāsanāstu raṅgāntāḥ kāshṭha-kuḍyāśma-saṁnibhāḥ*; *Sāhitya Darpaṇa* III. 12, *sādhāraṇyena ratyādirapi tadvat pratīyate* and Commentary, *ratyāderapi svātmagatatvena pratītau sabhyānām*. Æsthetic experience does not depend upon the particular theme expressed; but in the absence of any theme, there cannot be any occasion for the *pratīti* of *rasa*.

[2] *Daśarūpa* IV. 51, *arthabhāvanāsvādaḥ*.

[3] *Svātma-nirūpaṇa* 95.

not walk in it. There are still those, though few, whose use and understanding of art are innate and untaught, and who in their innocence (*bālya*) have never thought of "art" as a function added on to life, but only as a skill appropriate to every operation; and others, the majority, who have been mistaught to think of "art" as present or wanting in human work by calculation, and of "beauty" as a kind of varnish (*lepa*) or ornament (*alaṁkāra*) that can be added to or omitted from things at will. What service can be rendered to either of these kinds of men by the exposition of a theory of beauty, however correct (*pramiti*) and authoritative (*prameya*) it may be?[1] According to our understanding, the only service that can be rendered to the innocent is one of protection, whether indirectly by taking care that they shall not be corrupted or robbed of their inheritance by ignorant educationalists or patrons on the one hand, nor by exploitation[2] on the other; or directly, by the continuation of an understanding patronage, considering that a connoisseurship (*vichakshaṇatva*) not expressed in active interest and patronage overshoots its mark (*prayojanam atikrāmati*). Here then the function of a correct exposition of the theory of art is conservative. Service that can be rendered to the perversely educated (*mithyā-paṇḍita*) is of another sort, these having already broken away from, or been torn away from traditional modes of understanding, and now depending for guidance merely upon individual opinion, taste, and passing fashion. These above all need to be reminded that the practice of art is a vocation, not an accomplishment; that the primary virtue in the artist is obedience or faith; that connoisseurship rightly understood can be achieved only by a rectification of the whole personality, not by the mere study or

[1] In expounding the theories of art and beauty we have refrained from the expression of any opinions (*drishṭi*) or hypotheses (*kalpana*) of our own; relying only upon authority (Śruti and Smṛiti, Veda and Upaveda), we speak of our exposition as authoritative (*prameya*).

In making such an exposition, we have had regard only to the good of the work to be done (*kārya-svārtha*), not to its value for us or others and the exposition is open to criticism only from this point of view, viz. as to whether it is well and truly made. From our individual point of view, the work is vocational (*svadharma*), and undertaken not by choice but at the instigation of the Editors as *kārayitāraḥ*. On the other hand, the undertaking as such, and as distinguished from the performance, can only be justified with respect to human value (*purushārtha*) generally; the pursuit of knowledge for its own sake, like that of art for art's sake, being nothing better than a painting on the air and a cooking for oneself alone. Hence the enquiry, "What service can be rendered?"

[2] By "exploitation" is meant on the one hand a procuration of the craftsman's skill to the making of trivialities appropriate to the tourist trade, and on the other a tolerance of industrial forces tending to drive the craftsman from his workshop to the mills.

collecting of works of art; that competence (*svādakatva*) in the spectator, no less than skill (*kauśala*) in the artist must be earned—they cannot be imparted in the class-room. The " collector " and " lover of art," who thinks of museums and galleries as the proper destination of works of art, has more to learn from than to teach the man whose works of art are still in honour (*pūjita*) and in use (*prayukta*).[1] The service that can be rendered to the wrongly educated, and this means to most of those who at the present day pretend to education, must and can only be destructive of their fondest ideals.

Let us consider the present situation and some specific instances. It may be said without fear of contradiction that our present poverty, quantitative and qualitative, in works of art, in competent artists, and in effective connoisseurship is unique in the history of the world, and that in all these respects the present day can be most unfavourably contrasted with the past, from which we have inherited a superabundance of works of art, for which, however, we have little positive use. All that is not to say that manhood is dead in us, but that a certain aspect of manhood is lacking in us. Those of us who have recognized this state of affairs, and have sought to remedy it, have generally put the cart before the horse, thinking our need to be for works of art in greater number, or aspiring individually to become artists, rather than to become more profoundly and fully men. Others maintain that " art " is a luxury that an impoverished nation cannot " afford ", materials being costly, and time " valuable "—one may ask, in this connection also, valuable for what? Now the economic factor is practically without any bearing on the issue; our situation is not such that the rich only can afford to patronize the artist, or that he must be rich who would have about him things at once utilitarian and significant, but that the rich man could not, if he would, obtain for himself goods of such quality as was once common in the market, and can now be found only in glass cases; not that the consumer is dissatisfied with the quality of goods offered to him, but that he is insensitive to their defect; not that the clerk and his wife are literally penniless, but that they actually prefer a piece of jewellery made according to the meaningless patterns to be found in the catalogues of foreign manufacturers to one made after an " outmoded " angelic

[1] The present writer has learnt as much from living men, hereditary craftsmen working after the fashion of their craft (*śilpānurūpeṇa*), as from the books. The practice of the hereditary craftsman, and the theory as set forth in the books, are in complete agreement.

prototype[1]; not that we have no so-called works of art, but that those we have, particularly those purporting to be heroic or religious in theme, are in fact tawdry, and meretricious; not that the nationalist does not wish to express an Indian content in his emblems, but that he no longer knows what is Indian, nor understands the nature of symbolism; not that no attempts have been made to "revive" the arts of ancient India, but that our "Pre-Raphaelites" have imitated ancient styles rather than reiterated ancient meanings[2]; not that an art and artists of a higher order have not survived sporadically, even in our cities, but that infatuated by a supposedly higher taste we have held aloof from these, or else have thought of what was an essential grace in us, as merely raw material for anthropological and historical research.

It is a thankless task, but necessary to our purpose, to demonstrate our meaning by an analysis of specific instances; nor can we bring ourselves to illustrate by actual reproduction samples of our arts that are not arts; these overcrowd our palaces and drawing-rooms, and those who would understand should earn their judgements, not have judgements ready-made for them. A citation of a few cases will suffice; there will be recognized in each a reduction of the work of art from its proper nature, that of a tangibly presented work informed by a given intellectual content or meaning, to another and lower nature, that of a tangibly presented object uninformed by any meaning, and merely informative or useful.[3] "Reduction" is the converse of "transformation"; the reduction of an already known symbol to the condition of insignificant and merely sensible objectivity represents a fall or decadence precisely contrary in direction to that ascent which is accomplished when in taking "nature" for our starting point we proceed from appearance to form. If we take

[1] Incidentally, the lifting (*lunthana*) of these designs is an example of "flagrant plagiarism" (*pariharana*).

[2] Meanings (*artha*) are all created by the revolution of the Year (*saṁvatsara-pravartana*), that is, without beginning or end (*anādi, ananta*); and having neither place nor date, cannot be thought of as the private property of any one. He who identifies himself with any meaning or idea, finding it then at its source (Lat. *origo*, Skr. *udriṇa*, as in *Ṛg-Veda* X. 101. 5, *udriṇaṁ sasekaṁ anupakshitam*) within himself, is equally "original" with him who found it a thousand years ago; only the modality of the expression, the individual style, which is an accident and not an essence in the work of art, must be unique and cannot be repeated.

[3] In the work of art, utility is by no means precluded, but in the expression of a meaning and consequent possibility of a concurrence (*sādhāraṇya*) of the spectator therewith, there is provided an occasion of æsthetic experience in him. In the mere work, no meaning being expressed, there can be no concurrence, there is no possibility of æsthetic experience, but an occasion only for pleasure-pain reactions on the part of the consumer.

the symbol "lotus" (*pushkara*), which communicates the notion of a "ground" (*prithivī, bhūmi*), as the means of our support (*pratishṭhā*) in the boundless waters (*āpaḥ*) of the possibilities of existence,[1] and proceed to depict an angel standing or seated on a lotus which in every respect and to the best of our ability repeats the semblance of the natural flower as known to the botanist or to the bee, that is a decadence of art; for there has been introduced an incongruity (*viruddhatva*) between the notion of firm support proper to the concept, and that of frail delicacy proper to the natural flower; and so far from there being any possibility of a concurrence in the meaning and consequent delight, the spectator is made to feel a positive discomfort, for in this kind of "art" the angel too is made to take on flesh, and could the work be brought to life, would forthwith sink.[2] Or consider the sculptured portrait, not in the intelligible image of, but exactly like (*susadriśa*) a given man, and distinguishable from him only by the sense of touch or smell; here again is a decadent work, not well and truly made, but a travesty, for it pretends to be one thing, a living man, and is another, a piece of stone. Or consider the well-known representation of Mother India as an *allzu menschliche* (altogether too human) woman outlined against the map of India; here again the work is inanimate, in that the intellectual form (*paroksha nāma*) is not expressed at all; here there is nothing but an arbitrary juxtaposition of a sign for "any woman" (*sāmānyā strī*), and a symbol for "India" as known to the cartographer, that is over against himself objectively, by no means as the ground of his existence. Only the politician could be fed on such food as this; he who loves the Mother more than her position in the world is not fed, but starved by works of this kind, incongruity (*viruddhatva*) and inexpressiveness (*anirdeśatva*) inhibiting assimilation. It is true that by the intensity of the spectator's ardour (*tapas*) the defect (*dosha*) of any image may be overcome[3]; but the spectator's virtue, even when really a virtue and not merely an idle

[1] Sāyaṇa on *Ṛig-Veda* VI. 16. 3 (*agni pushkarāt*): *pushkara-parṇasya sarva-jagad-dhārakatva*.

[2] Incongruity (*viruddhatva*) is the reverse of concordance (*sādṛśya*). "Concordance" in the *pratika* "lotus" subsists on the likeness of the relation of cosmic "ground" to cosmic "waters" on the one hand, and actual lotus to actual lake on the other, not at all on any resemblance between the painted form and the natural flower.

Nothing of what has been said above denies the propriety of literal imitation in any work intended to serve the purposes of a science; in the treatise on botany we expect, and have a right to expect, to learn what the lotus actually looks like, not what the symbol lotus "means"; in the treatise on botany, formality would be a fault.

[3] *Sukranītisāra* IV. 4. 160.

sentimentality, by no means excuses the artist's fault, whose business (*svadharma*) it is to *know* how things ought to be done. Here the defect is primarily æsthetic; at the same time further offence is offered in that the actual representations of this motif are glaring examples of bad taste, whereby the draughtsman is betrayed, not as artist, but as man. Rendered into verbal symbols, all that the nationalist actually voices in this emblem is, not a dedication to a Motherland, but service promised to the genus *homo*, species *indicus*, and sex female. Or finally, turning to the stage, when the actor forgets to register (*sūch, rūp*) the determinants (*vibhāva*) of feeling (*bhāva*) proper to the theme (*vastu*), and merely exhibits his own emotions, that is not an art at all, not acting (*nāṭya*), but merely behaviour (*svabhāvāt*), and a crying baby achieves no less: "or," as Śaṅkarāchārya expresses it, "does the actor, playing a woman's part, pant for a husband, thinking himself a woman?"[1]

Thus all direction has been lost, and there is revealed the dark disorder of our life. Can we refer to any sign of life, or evidence of a reintegration, to any art bespeaking the entire man? Judging by the criteria deduced from scripture and tradition, we must answer "Yes." The weaving of homespun cloth (*khaddar*), an art in itself of immemorial antiquity, is effectively a new thing in our experience. This is an art that answers exactly to our such and such desired ends, to human values as we understand them in the light of our present environment (*kāla-deśa*); one that in practical application answers to our material necessity, and is at the same time an image in his likeness whom we worship in his ultimate simplicity (*samatā*) rather than as arrayed in all his glory. It was not indeed "taste" that brought us to the use of homespun, nor on the other hand was this merely an outwardly imposed privation; it was only by a monastic simplicity of demeanour that man could imitate divine poverty: now that we understand the significance of what we did, we feel that nothing else could "become us"; for the present we are assured that to be arrayed in glorious garments is not merely bad economy, but also bad taste.

A canvas had to be prepared (*parikṛita*), cleansed of its disfigured images, and whitened, before it could be looked for that he who is eternally the same, but takes on unsuspected likenesses which we cannot yet imagine, could be revealed again in linear or brightly coloured shapes reflecting his intellectually emanated forms.[2] It does not depend on any

[1] *Śataślokī*, 7.

[2] Metaphor based on *Pañchadaśī*, Sect. 6; the notion *unmīlita-chitra-nyāya*; *Maitrāyaṇī Up.* IV. 2 (*āditye mahat......ādarśe pratirūpaḥ*), and similar texts.

will of ours as "lovers of art," but only on our willingness, upon obedience (*śraddhā*), whether or when newborn aspects of his image-bearing light (*sarūpa-jyotish*)[1] may blossom (*unmīl*) on the walls of human temples and on tissues woven by human hands. In the meantime, homespun cloth and whitewashed walls are works of art perfected in their kind, no less expressive of an intellectual reintegration than practically serviceable, fully befitting the dignity of man. For the present we have neither ends to be served nor meanings to express for which another and more intricate art would be appropriate; to aspire to any other art would be merely an ambition, analogous to his who claims another vocation (*para-dharma*) than his own. In speaking of the most austere style as the only style at once appropriate and well-becoming now, we do not mean to say that another and infinitely richer style may not as well become man's dignity upon another occasion, whether soon or late. To be attached to an austere style would be an error no less than to be attached to one more various (*vichitra*): man's entelechy as man lies not in non-participation (*akarma*), but in virtuosity (*karmashu kauśalam*) without attachment (*asaktatva*).[2] If the asceticism of the student (*brahmacharya*) becomes us now, we must expect to play the part of wealthy householders (*grihastha*) when that is required of us in turn, only at last and after all our work is done, returning to a comparable austerity, but of a higher order. Art, whether human or angelic, begins in a potentiality of all unuttered things, proceeds to expression, and ends in an understanding of the absolute simplicity or sameness of all things; ours is a beginning and a promise.

[1] *Ṛig-Veda* X. 55. 3; cf. *chitra-bhāsa*, *chitra-śochi*, and *bhā-rūpa* elsewhere.

[2] *Bṛih. Up.* I. 4. 15, *vedo vānanukto anyadvā karmākṛitaṁ (na bhunakti)*; *Bhagavad-Gita* II. 47, *mā te saṅgo 'stvakarmaṇi*; *ibid.* III. 4; and similar texts.

PRINCIPLES OF INDIAN ARCHITECTURE

That architecture is essentially different from Civil Engineering or the mere art of building in any form was clearly understood in India in very early times even by those who casually referred to the subject. It is probably due to this that the architect was designated *viśvakarman* in all classes of Sanskrit literature and was identified with the Creator of the universe Himself, in whose creation there is hardly an object which does not signify a subjective and symbolic meaning through its form. The religious-minded would naturally go a step further and read a spiritual significance in each of the innumerable forms of an endless variety of natural objects. But the philosophers have recognized individuality only for a certain class of beings who claim conscience and intelligence as their monopoly. The scientists, however, have classified the so-called unintelligent but living objects without conscience into species, each of which is endowed with a special form and an intricate organism or machinery every component part of which has been assigned a function, amply proving the fact that nothing is meaningless in the creation. But the mere fact that each and every part of a structure or an engine has got a special purpose to serve would not necessarily signify a subjective meaning of its form, unless, however, it was originally intended by the designer to express an idea, spiritual or material, of which the plan of the structure is a symbol. All ideas to be expressed through symbolic forms need not be spiritual, as opposed to temporal or material, relating to something sacred and divine, intangible and mystic, involving a sacred or secret meaning hidden from the eyes of the ordinary reader and only revealed to a spiritually enlightened mind. A symbol or an emblem, however, is an arbitrary mark or an abbreviating method, which, when conventionalized, serves as a sign by which one knows a thing. In this sense a form, to be truly symbolic, must bear an idealistic rather than a realistic significance. An additional number of heads and arms to imply a correspondingly multiplied amount of intellect and strength would hardly serve as a symbol of brain power and physical superiority. Neither an aeroplane imitating the form of a bird would properly symbolize that bird. The cross on the other hand being nothing but an ancient crude machine used for capital punishment, is, with the Christians, a symbol or conventionalized sign for sacrifice of life by



SANCHI TOPE

Courtesy: Mr. O. C. Gangoly



AN ANCIENT TEMPLE AT VRINDAVANA

Christ for the sake of a certain faith. The non-Christians need not read the symbol of the cross in the same sense as the Christians do, if, however, there is nothing in the scripture or in the etymology of the word to indicate such a significance of the term 'cross.' It is because of the convention alone and owing to the absence of a surer mark or sign that there is a sharp difference in the reading of a symbol. For an absolutely arbitrary conclusion no recognized sign or premises are required.

In architecture, however, of different countries, creeds and peoples, symbols are not so arbitrary. In most of those instances the conventions are well established. In Indian architecture the conventions are further strengthened by certain indications, which being missed by most of the historians and critics, there has been a wide range of conjectures. These conjectures have further been unchecked owing to the fact that the scanty and fragmentary archæological remains on which the study of the subject has been so far entirely based, cannot give any connected idea of Indian architecture. A dilapidated fortress, a fallen town, a demolished village, a broken pillar, a top-less building, a forgotten crown or throne could never furnish an entire picture of the structure that alone may indicate some hidden meaning which the architect might have in his mind to express through its symbol. Besides, those fragmentary remains of architecture do not bear any special designations for their component parts or the whole structure by which some special sense might have been intended to be expressed. A complete idea of the whole structure together with special designations for the component parts and ornamental mouldings, so far as Indian architecture is concerned, can be gathered from the literary descriptions spread over all classes of Sanskrit literature,[1] especially in the hundreds of architectural texts[2] which have survived mostly in fragmentary condition like the archæological remains themselves.

Of the avowedly architectural texts the *Mānasāra*[3] (essence of measurement) appears to be the most standard work on architecture and

[1] See the writer's *Indian Architecture*, pp. 1-34.

[2] See the writer's *Dictionary of Hindu Architecture*, Appendix A, pp. 749-804.

[3] It has been published through the Oxford University Press by the Government of the United Provinces of Agra and Oudh in five volumes covering some 3000 pages of crown quarto size and comprising a critically edited Text, a fully annotated Translation in English, an encyclopaedic Dictionary of some three thousand technical terms, and an up-to-date Introductory Volume surveying the whole range of the subjects both historically and comparatively with connected literature of this and other countries, and a set of plates in line and in colours drawn in measure and strictly after the description as given in the original text.

sculpture, being complete and full in all details. It deals with both the method and principle and the constructional details of all architectural and sculptural objects and cognate matters. In this standard work, *Mānasāra*, the term architecture is taken in its broadest sense and implies almost everything that is built or constructed according to a design and with an artistic finish. Thus it includes what is generally known as sculpture and deals with its different branches in a scientific manner. Architecture proper or house-building is preceded by an elaborate treatment of the village-scheme, the town-planning and all the cognate subjects, such as laying out gardens, constructing market-places, commercial ports and harbours, making roads, bridges, gateways and triumphal arches, digging wells, tanks, trenches, drains, sewers and moats, building enclosure walls, embankments, dams, railings, landing places, flights of steps for hills and bathing ghats and ladders. All kinds of buildings in use at the time or likely to be required by the country, including religious temples, common dwellings, gorgeous edifices, pompous palaces and mansions, and the military establishments, are treated with minutest detail, alternative measures, and a large variety of options to suit all requirements. Articles of furniture are similarly treated and include bedsteads, couches, tables, chairs, wardrobes, baskets, cages, nests, mills, conveyances, lamps and lamp-posts for the street. Thrones and crowns for different ranks of kings and deities form a distinct branch. Personal ornaments and dresses and garments include various chains, ear-rings, armlets, anklets, foot-rings, waist-bands, jackets, head-gears, and foot-wears. The preliminary subjects include consideration of ground conditions and atmospheric conditions, temperature, sunshine, wind direction, humidity, rainfall, dryness, growth of vegetation and other site conditions, elevation and sloping of the ground, testing of soil and finding out exact cardinal points for orientation of buildings and determining proper aspect and necessary prospect and privacy.

In this article nothing more than the general principle of this vast subject, of which the foregoing list may supply a picture, may at best be touched. This principle appears to have been based upon a fundamental truth and a settled rule of action. But the laws are flexible to an extent inasmuch as a large number of options are allowed and discretionary right is permitted in order to suit the different and unforeseen conditions. There is, however, a regulating principle which is inviolable and that inviolable principle consists in 'the fine art of designing and constructing ornamental buildings.' The truly architectural design

always implies a mental scheme which is expressed in a plan in outline and intended to indicate a subjective and symbolic meaning.

After a thorough examination of the meteorological conditions and testing of the soil and surroundings of the ground, when a site is finally selected for any of the above-mentioned objects, it is considered under one of the thirty-two schemes into which the site-plans are distinguished. Each of these site-plans is given a significant name and is divided into a certain number of square plots bearing symbolic designations.

The first of these site-plans is called *Sakala* or one plot, which means 'all' or 'an undivided whole' as opposed to *Vikala* or 'that can be divided into separate plots.'[1] Its northern side is designated Soma, the moon, who is the recognized lord of the north; the eastern side is named after the quarter-lord Āditya, the sun; the southern side is called Yama, generally known as the god of death, but really meaning 'the restrainer,' the burning horizon of the south of India; and the western side is named after the lord of that quarter Varuṇa, god of water, that which encompasses the western ocean of India.

The second plan is called *Pechaka,* which ordinarily means an owl and may etymologically imply a couch or bed. It is divided into four square plots, the four sides being designated by the same four epithets as those of the *Sakala* plan, but the corners bear separate designations. The north-east is called Īśa, that which lords over, having the purifying morning sun on the right and the invigorating Himalayan wind on the left. The south-east is called Agni or fire, implying the hottest zone, as it gets the maximum heat from the sun. The south-west is called Pavana or wind, which supplies the sea-breeze both from the southern and western Indian ocean. The north-west is called Gagana or the sky, joining the endless horizon over the highest peak of the Himalayas.

The third plan, *Piṭha,* etymologically means a pedestal or back and is divided into nine plots, eight of which bear the same epithets as the eight directions of the *Pechaka* plan, and the ninth plot at the centre is called *Pṛithvi,* the earth, which serves as base or support for all structures. In the subsequent plans the centre plot is assigned to Brahmā, who, as the Creator, is always considered by the Hindus as the pivot around which everything else moves. The increasing number of plots in each plan are assigned to different quarter-lords each one bearing a special significance. There is no room for a detailed examination of all

[1] In several towns the Municipal Boards do not permit the separation of plots although more than one residence are allowed to be built in one plot.

the plans; there being as many as one thousand and twenty-four plots in the thirty-second plan called *Chandrakānta*, the moon-light or moon-glade. Most of these plans are considered in square form, but triangular and circular varieties also are referred to. A look into the drawings may give some idea of the subject.[1]

These site-plans are used in designing villages and towns as also dwellings and other houses. The exact situation of a particular quarter, building or room is ascertained by a reference to the quarter-lord to whom a plot is assigned in these plans.

The village scheme is considered under eight groups. Each class bears a symbolic designation and lay-out. The first group is called *Daṇḍaka*, which etymologically means 'a stick' and is based upon a straight plan. Like other groups it is also divided into different blocks which are flanked by roads and lanes running straight from one end to the other.[2] The next group is called *Sarvato-bhadra*, having the main gates on all the (four) sides. It is divided into four blocks and there is a public hall or temple in the centre of the village. Plate XVI will show that it looks all-auspicious. The third group of villages is called *Nandyāvarta* and its plan, blocks and very look will amply justify its title of 'the repetition of pleasant look.' Plate XVII will show that it is a prosperous small town. The next group is called *Padmaka* or lotus. Its lotus-plan is maintained by its surrounding lotus-like look as well as the plan of the four blocks into which the village is divided. It is more a town than a village and is honoured by the king's palace. Plate XVIII will further show the cosmopolitan character of its population which is not possessed by an ordinary village. The fifth group of villages called *Svastika* is also honoured with the royal palace and residences of nobles and ministers. It derives its symbolic name from its general plan which is generally translated by cross-shape but comprises various forms.[3] Plate XIX will give some idea of one of the forms. The next group is called *Prastara* and Plate XX will show that it is an enlarged form of the *Daṇḍaka* plan and contains a cosmopolitan population including the king's palace. The seventh group is called *Kārmuka* because of its bow-shape. It is situated on the river-side and is divided into four triangular blocks lengthwise and into three semi-circular blocks breadthwise. A reference to Plate XXI will supply other details of its being a small com-

[1] See the writer's *Architecture of Mānasāra*, Vol. V, Plates III-XIV.

[2] Plate XV of the writer's book of illustrations referred to above will supply an idea of the *Daṇḍaka* village.

[3] See the writer's *Dictionary of Hindu Architecture*, pp. 733-736.



TEJPAL TEMPLE AT MT. ABU

Photo: Bourne & Shepherd



CEILING OF TEJPAL TEMPLE

Courtesy: Mr. O. C. Gangoly

mercial town or riverside market-place. Towns like Mirzapur, old Patna, Benares, etc., appear to have been based on this plan. The last group of village schemes is called *Chaturmukha* or ' of four (uniform) façades.' Plate XXII will show its four faces and interesting details of the plan. Its spiritual nature is emphasized by the fact that its central heart portion is assigned to the Brāhmaṇas and priests, while the royal palace, if required, is built at the north-west corner, and the surrounding road is called the circumambulatory passage.

The town-plan is an enlargement of the village scheme. But while the latter is classified on the basis of the requirement of the village life, the former is based upon the requirement of city population of which the seat of government, royal residence, secretariat and other offices are the leading things. The complexities of city life are further increased in consideration of the social and political rank of its chief resident, the head of the government. For this and other purposes the royalty is divided into nine ranks, from an imperialist to a petty chief or headman. The limited space would not permit a detailed examination of the eight main city-plans and their highly complex details. Only a reference to Plates XXIII-XXV may supply an idea, if not an elucidation, of the scientific, artistic and symbolic nature of the plans. Plate XXIII will show the details of what is called *Rājadhānīya-nagara* or the city with the seat of government as the chief thing. The Chakravartin king who is the first resident is highest in rank among the nine classes of kings. For the imperial purposes the cosmopolitan nature of temples, public halls, parks, office-quarters, soldier-barracks, police-quarters and residences of the civil population is emphasized in this plan. The next three plans called respectively *Nagara*, *Pura* and *Nagarī* are cities of smaller types and vary only in minor details. The fifth type is called *Kharvaṭa*. Plate XXIV will supply the general outline and elucidate its circular plan based upon the disc of Vishṇu, the centre being reserved for the city temple.[1] The sixth type is called *Kheṭa* and is built both on the river or sea-side as well as in the valley of a mountain. A comparison of Plates XXIV and XXI will show that *Kheṭa* and *Kārmuka* have got a family similarity, although different in look. The town like *Rānikheṭa* appears to have been based on this plan. The eighth type is called *Pattana*, settlement, a commercial town on the sea-side. Cities like Bombay, Madras and many others are apparently based on this type.

[1] The modern city of London appears to be of a similar plan, with St. Paul's Cathedral in the centre.

There are fifteen types of fortresses and forts, many of which are fortified towns, the rest being military establishments which have now become matters of the past and of only historical interest. They are also symbolic in nature.

Houses for various purposes were built in villages, towns and fortified cities. There were both semi-detached and detached pavilions and halls. The *ārāma* or rest-house is stated to have been built not too far from the town and not too near, convenient for going and for coming, easily accessible to all...by day not too crowded, by night not exposed to too much noise and alarm.[1] Abodes of five kinds are mentioned in Buddhist literature.[2] *Vihāras* are the well-known monasteries or temples of the Buddhists, originally implying halls where the monks met. *Ardhayogas* seem to be a special kind of Bengal buildings partly religious and partly residential. *Prāsādas* are wholly residential storeyed buildings. *Harmyas* are a larger type of storeyed mansions. *Guhās* are smaller buildings originally built underground for middle-class people.

This classification went on changing with the progress of time and the art of building. Some of the Purāṇas retained the fivefold division under different names. Thus in the *Agni* and *Garuḍa Purāṇas* the *Vairāja* class of quadrangular pattern includes nine types of buildings with various details. The *Pushpaka* group is rectangular in shape and includes another nine types. The *Kailāsa* class is round in shape and includes another nine types. The *Maṇika* class is oval in shape and includes another nine types. Lastly, *Trivishṭapa* group is octagonal in shape and comprises another nine types of buildings with characteristic features. The *Matsya* and *Bhavishya Purāṇas* as also the *Bṛihat-Saṁhitā* describe twenty types of edifices with significant epithets and such details as hundred towers (*śriṅga*), sixteen storeys, many steeples (*śikhara*) and fifty cubits in dimension. The *Kāmikāgama* similarly describes another twenty types and the *Suprabhedāgama* ten types.[3]

Śilpaśāstras like the *Mānasāra* supply more scientific classification and constructional details. There are ninety-eight ordinary types and numerous special groups described therein, of which no further elucidation is possible here.[4] Thus there were small tenements and flats, cottages and middle-class houses, and rest-houses in gardens and Bungalows with orchards. The whole compound was enclosed with

[1] See the writer's *Hindu Architecture*, p. 11; *Chullavagga* VI. 4. 8.
[2] *Vinaya Texts Mahāvagga* I. 30. 4 and *Chullavagga* VI. 1. 2.
[3] See the writer's *Hindu Architecture*, pp. 113-119. [4] *Ibid.*, pp. 111-113.

ramparts of three kinds, namely, brick walls, stone walls, and wooden fences, which were again surrounded with bamboo fences, thorn fences and ditches. The larger palaces, mansions and temples comprised various courts, each of which was furnished with a gate-house. These edifices ran up to twelve storeys, while their gate-houses were raised to seventeen storeys. The large mansions were built in rows in various shapes.

The smaller residential houses were built comprising "dwelling rooms, retiring rooms and store-rooms, service halls and halls with fire-places in them, store-houses and closets, cloisters, halls for exercise, wells, sheds for the well, bath-rooms, halls attached to the bath-rooms, ponds, and open-roofed sheds." The devotee (*upāsaka*) built for his own use "a residence, a sleeping room, a stable, a tower, a one-peaked building, a shop, a *boutique*, a storeyed house, an attic, a cave, a cell, a store-room, a refectory, a fire-room, a kitchen, a privy, a place to walk in, a house to walk in, a well, a well-house, a bathing place for hot sitting baths, a room therefor, a lotus-pond and a pavilion." The inner chambers of larger houses were divided into three classes, called *Śivikā-garbha* or square halls, *Nālikā-garbha* or rectangular halls, and *Harmya-garbha* or large dining halls.[1] A middle-class house with a quadrangular courtyard in the centre and comprising sixteen rooms was a favourite plan both in the ages of the Purāṇas and Āgamas on the one hand and the later *Śilpaśāstras* on the other.[2] In the north-east corner was built (1) the family chapel; in the east (2) the room for all things, (3) the bath-room, and (4) the room for churning milk; in the south-east corner (5) the kitchen; in the south (6) the *Bṛitasagṛiha*(?), (7) the *Śaina-gṛiha*, and (8) the privy; in the south-west corner (9) the library; in the west (10) the study, (11) the dining hall, and (12) the weeping room; in the north-west corner (13) the granary; and in the north (14) the bedroom, (15) the store-room, and (16) the room for invalids or medicine.

All houses, large and small, were furnished with suitable doors, windows, staircases and various kinds of verandahs, namely, covered terraces, inner verandahs, overhanging eaves and verandahs supported on pillars with capitals of elephant head. All houses, big or small, bore certain other general features. Thus there were five shapes of buildings,

[1] See the writer's *Hindu Architecture*, pp. 11-12; *Mahāvagga* III. 5. 9.

[2] See the writer's *Dictionary of Hindu Architecture*, pp. 612-614, for quotations from the *Matsya* and *Agni Purāṇas*, the *Kāmikāgama*, the *Vāstu-tattva*, *Vāstu-prabandha*, and *Śilpaśāstra-sāra-saṁgraha*.

namely, quadrangular (comprising both square and rectangular), octagonal, oval, round and circular. Buildings were again divided into masculine, feminine and neuter classes, which depended upon equiangular and other shapes, and in case of temples the sexes of the chief deities were also taken into consideration. The *Sthānaka* or standing, *Āsana* or seated and *Śayana* or reclining groups depended upon a certain aspect and in case of temples the posture of the chief deity was further taken into consideration. The *Śuddha* or pure, *Miśra* or mixed and *Saṅkīrṇa* or amalgamated divisions depended upon the materials, stone, brick and wood, of which a house was mainly built. The *Jāti, Chhanda, Vikalpa* and *Ābhāsa* classes depended on the units of measurement which comprised the cubit of twenty-four, twenty-five, twenty-six and twenty-seven *aṅgulas*, each measuring exactly three-fourths of an inch. *Sañchita, Asañchita* and *Apasañchita* groups depended upon the standard of measure, the height, breadth, and length of the building being respectively the regulator of the measure for the whole structure. Lastly, a building must belong to one of the three main styles, called *Nāgara* or northern, *Vesara* or eastern and *Drāviḍa* or southern. The northern style is distinguished by its quadrangular shape. The eastern style of buildings is marked by its round shape from the neck upwards. In the southern style the upper portion of buildings from the neck is octagonal; of this style there is a subdivision called *Andhra*, in which the upper portion is hexagonal.[1]

The limitation of space would not permit proper elucidation of these matters. By way of an instance a reference may be made to the proportions alone. The technical names of the proportions of height are significant. The first one is called *Śāntika* or peaceful. In this proportion the height is equal to the breadth, and this is æsthetically a graceful proportion both for a building and a room. The second one is called *Paushṭika*, meaning strong, eminent or rich. In this proportion the height is one and one-fourth of the breadth, and this would give to the building a good stability and to the room a healthy look. The third one is called *Jayada* or victory-yielding. In this proportion the height is one and one-half of the breadth, and this gives a pleasant appearance to the building or the room. The fourth one has two names: *Sarvakāmika* or good in every way, and *Dhanada* or wealth-giving. In this proportion the height is one and three-fourths of the breadth, and according to the literal meaning of the term *Sarvakāmika*, this would make the building

[1] The *Mānasāra* XLIII, pp. 124-125; *Suprabhedāgama* XXXI, pp. 38-39.

and the room strong as well as beautiful. The fifth or last one is called *Adbhuta* or marvellous. In this proportion the height is twice the breadth, and this gives a wonderful loftiness and gorgeous look to the building or the room.[1]

To whichever of these heights a building is erected, the roof thereof may terminate in the flat, pent or spherical shape. The flat roof was an imitation of the cave houses, which at first were mere natural caves used as shelters both by unskilled men and beasts. The pent roof was the next development in the art of building, where the stability was still supplied on the three sides by the rocks. The highest development in architecture is the spherical roof. The spherical roof is divided into four main parts, called *śikhara* or cupola, *śikhā* or pinnacle, *śikhānta* or finial, and *śikhā-maṇi* or apex. No distinction has been made in the *Śilpa-śāstras* of the constructional details of the Vishṇu and Śiva temples, or the Brāhmaṇical, Buddhist and Jain temples regarding their *śikhara* or spherical roof. The height of the *śikhara* is, however, stated to vary according to caste rather than sect. In the matter of the finial of temples a comparison of the Hindu *śikhara* with the steeple of a Christian church on the one hand and the dome of a Mohammedan mosque on the other will show the scientific knowledge, artistic skill, æsthetic sense, and spiritual aspiration of the Christian, Hindu and Muslim builders. There is, however, an important agreement among those three leading faiths in the symbolic spiritual expression, each endeavouring in its own way to point to the highest of the high and the finest of the fine.

So far as the Hindu architecture is concerned, the all-important *śikhara* appears to have been developed from the very origin of the idea of temple. Idol-worship and the origin of temples did not go hand in hand. Even in the absence of later images of deities, we had our sacrificial altars. The *Śulba-sūtras* which are the supplementary portion of the *Kalpa-sūtras* treating of the measurement and construction of the different *vedis* or altars, furnish us with some interesting structural details of the *Agnis*, the large altars built of bricks. The construction of these altars, which were required for the great *soma* sacrifice, seems to have been based on sound scientific principles and was probably the beginning of religious architecture or temple-building in India.

These altars could be constructed in different shapes, the earliest enumeration of which is found in the *Taittirīya Saṁhitā* (V. 4. 11). Following this enumeration, Baudhāyana and Āpastamba furnish us with

[1] The *Mānasāra* XXXV, pp. 22-26. See also the writer's *Dictionary*, pp. 82-83.

full particulars about the shape of all these different *chitis* (altars) and the bricks which were employed for their construction.

The *Chaturasra-śyenachit* is so called because it resembles the form of a falcon, and the bricks out of which it is composed are all square-shaped. The *Kaṅka-chit* in the form of a heron[1] is the same as the *Śyena-chit* except the two additional feet. The *Alaja-chit* is the same except the additional wings. The *Prauga-chit* is an equilateral triangle. The *Ubhayataḥ-praugachit* is made up of two such triangles joined at their bases. The *Rathachakra-chit* is in the form of a wheel—a massive wheel without spokes and a wheel with sixteen spokes. *Droṇa-chit* is like a vessel or tube, square or circular. The *Parichāyya-chit* has a circular outline and is equal to the *Rathachakra-chit*, differing in the arrangement of bricks which are to be placed in six concentric circles. The *Samuhya-chit* is circular in shape and made of loose earth and bricks. Lastly, the *Kūrma-chit* resembles a tortoise and is of a triangular or circular shape.[2]

Everyone of these altars was constructed of five layers of bricks, which together came up to the height of the knee; in some cases ten or fifteen layers, and proportionate increase in the height of the altar were prescribed. Every layer in its turn was to consist of two hundred bricks, so that the whole *Agni* (altar) contained a thousand; the first, third and fifth layers were divided into two hundred parts in exactly the same manner; a different division was adopted for the second and the fourth, so that one brick was never laid upon another of the same size and form. The first altar covered an area of 7½ *purushas*, which means 7½ squares, each side of which was equal to a *purusha*, *i.e.* the height of a man with uplifted arms. On each subsequent occasion the area was increased by one square *purusha*. Thus at the second layer of the altar one square *purusha* was added to the 7½ constituting the first *chiti* and at the third layer two square *purushas* were added and so on. But the shape of the whole and the relative proportion of each constituent part had to remain unchanged. The area of every *chiti*, whatever its shape might be—falcon, wheel, tortoise, etc., had to be equal to 7½ square *purushas*.[3]

[1] Compare Burnell, Catalogue, 29, of a carrion kite, and Thibaut, *J.A.S.B.*, 1875, part I.

[2] These may account for the various shapes of temples disclosed by the archaeological remains.

[3] See the writer's *Indian Architecture*, pp. 7-8. *The Pandit*, New Series, June, 1876, no. 1, Vols. I, IV, 1882; Old Series, June, 1874, no. 97, Vols. IX, X, May, 1876. *The Journal of Vedic Studies*, Lahore, 1934, January, pp. 1-5, May, pp. 8-18, September, pp. 19-29.



MUKTESVARA (SIVA) TEMPLE WITH GATE

Courtesy: Mr. O. C. Gangoly



KANDĀRYA MAHĀDEVA TEMPLE, KHAJURAHO

Courtesy: Mr. H. C. Chakladar

These in time grew up to be the twelve-storeyed temples together with seventeen-storeyed gate-houses. They were not mere sky-scrapers; they expanded sidewise also. Thus we see the courts of four classes of edifices, each comprising five to seven varieties, built for offerings of family members, beauty and defence. Each of the *Jāti, Chhanda, Vikalpa,* and *Ābhāsa* classes of edifices comprises five courts where hundreds of residences or shrines for attendant deities characteristic of Vishṇu, Śiva, Buddha, Jain and other temples were built. The innermost court called *Antar-maṇḍala* both in temples and palaces, where the main shrine or the palace is situated, is furnished with the gate-house called *Dvāra-śobhā* or beauty of the gate. The second court both for temples and residential buildings, called *Antanihāra,* is furnished with the gate-house known as *Dvāra-śālā* or gate-hall. The third court called *Madhyama-hārā* is furnished with the gate-house known as *Dvāra-prāsāda* or gate-palace. The fourth court known as *Prākāra* or enclosure proper is furnished with the gate-house called *Dvāra-harmya* or gate-edifice. The fifth court called *Mahāmaryādā* or larger boundary is furnished with the gate-house known as *Mahāgopura* or great gate-house. The sixth and seventh courts mainly serve the purpose of defence walls wherein are housed the soldiers and other such defence forces.[1]

Pavilions of some hundred types classified as belonging to temples and residential buildings and in accordance with shapes, faces and number of columns are also symbolic in character and highly artistic in design and construction.[2]

The storeyed mansions of six types each comprising several varieties, running up to twelve storeys, built for the sake of beauty, health and enjoyment of the kings and others, reached the highest development in pomp and show. A proper elucidation of details would require the space of a separate book. Only a passing reference can at best be made here. The *Daṇḍaka* group deriving its epithet from the straight plan is an isolated mansion comprising a single row of buildings generally built for the Maṇḍaleśa and other (inferior) classes of kings. The *Svastika* group of mansions is plough-shaped and consists of two rows of buildings used generally by the Paṭṭadhara and other classes of kings. The *Maulika* mansions are shaped like the winnowing basket and comprise three rows of buildings, and are assigned to the Pārshṇika and other classes of kings. The *Chaturmukha* group of mansions comprises four rows of buildings

[1] For illustrations see the writer's *Architecture of Mānasāra,* Vol. V.

[2] See Plates CVIII-CXII.

and is meant for the Narendra and other classes of kings. The *Sarvatobhadra* mansions consist of seven rows of buildings and are assigned to the Mahārāja and other classes of kings. Lastly, the *Vardhamāna* (or progressive) mansions comprise as many as ten rows artistically joined together and are assigned to the Chakravartin and other classes of kings.[1] This brief survey of a highly developed and comprehensive art of the most practical utility may indicate the well-thought-out scheme of architecture of Hindu India and may show the harmonious combination of the spiritual basis with the æsthetic outlook.

[1] See Plates CXIII-CXVI.

SOME ARCHITECTURAL CONVENTIONS OF SOUTH INDIA

Architecture is one of the most important forms in which the Indian culture has found expression from very ancient times. Even a casual observer of the Indian architecture will be struck by the great differences it exhibits; and this becomes all the more surprising when it is also pointed out that all Indian structures, that is to say, Hindu ones, claim to be based upon the same authoritative texts. To the South Indian nowhere is this difference more pronounced than when a comparison is instituted between the east coast and the west coast structures; so different from each other do they appear. It is not difficult to illustrate this aspect even by a superficial comparison. Almost everywhere in India, the temple formed the focussing point in all civic and social life and many of our towns and villages have grown about the temple. While this is generally true everywhere, it has at the same time led to exuberant difference in practical working. The west coast temple towns are in every respect different from those on this side of the Ghats. Coming to the temples themselves, on the east coast the *gopuram* (gate) constitutes the most important, the most imposing part of the temple, speaking from the architectural point of view. But on the west coast, it is essentially a *gopuram* both in appearance and function: it is never allowed to usurp the place of importance, which is always assigned to the *sanctum sanctorum*. The shrine is the central *aṅgin* on which the architect spends his thought and skill, while the other figures only as an *aṅga*, an appendage. There are radically different viewpoints and according as the one or the other is given the predominance, there will be practical differences. The whole temple area again bears a distinct proportion to the size of the idol: the height of the basement and the superstructure of the *sanctum sanctorum*, the height of the *gopuram* and its distance from the shrine, the *matilakam* and its area—all these bear a distinct proportion to the size of the idol. In other words, given the size of the idol, one could easily picture the lay-out of the temple area. Such is the convention obtaining in Kerala (Malabar), but speaking from a superficial observation, it appears such a convention is not observed on the east coast. There is again another convention strictly adhered to almost everywhere in both the parts that a private dwelling-house should not exceed the

height of the temple in the locality. Ambitious rich men have never been wanting who wished to build houses bigger than the temple. To satisfy the vanity of such as these a convention came to be accepted on the east coast that they might do so provided that they added one more storey to the temple. The result of this convention was that while there grew up big houses all around, the temple also grew larger and larger. Here is the point at issue. The acceptance of this convention led to the haphazard growth of the temple with the result that it lost its organic unity not merely with reference to itself, but also with reference to the town that grew up around it. On the west coast also a convention came to be adopted regarding this and it was to hand over the building to the deity and then take it back from him for a nominal payment. Hence in spite of the growth of bigger buildings in the town, the unity of the temple was never affected. Here then differences in accepted conventions constitute an essential basis which leads to ultimate differentiation.

The differences also arise from natural causes operating in different places. Architecture is primarily utilitarian, both in conception and in practice; and at the same time it is expected to satisfy our æsthetic sense. A structure which has any pretence to architectural quality must satisfy both these aspects of utility and of beauty. This was particularly insisted on as regards religious structures, which, as one could easily see, are also intended to appeal to human emotions and rouse in them a sense of religion. These are the two fundamental basic motives of all forms of architecture and these are found accepted by everybody. But on the practical side they differ and differ considerably. For the ideas of utility are generally governed by the need for protection from the inclemencies of weather and from the cruel man and beast as well as for secrecy, space, etc., and these give ample field for ensuring great differences. To these are to be added differences due to climatological and physiographical conditions on one side and æsthetic outlook on the other; that is to say, situation on one side and the people for whom the structure is intended on the other. Thus terraced structures are a general feature on the east coast, while roofed houses are a regular feature on the west coast. The reason is clear: the climatic conditions of Kerala with its heavy seasonal rainfalls put it out of the question to have terraced roofs in our houses. The general cleanly simple character of the Malayali is seen reflected in his houses, while the character of the people is no less reflected in the structures on the east coast. Similarly, the space and accommodation found in a palace is essentially different from what is

found in an ordinary house. Again ornamental motives and forms of structure are as dependent upon the taste of the people as upon the materials used in the structure; and these give their own quota to ensure differences.

Thus even when fundamental bases governing the principles of Hindu structures are the same, the acceptance of different local conventions and modes of escaping conventions, no less than the existence of climatological, physiographical and æsthetic differences and consequent differences in details, tends to make the styles and types different. Such differences are inevitable in the very nature of things, and this we do find in almost every sphere. It is particularly so as regards architecture and other forms of art. These are localized and individualized on one side, but on the other they also possess the element of the universal; the former tending to introduce limitations and hence differences, and the latter stressing the fundamental unity. Unity and differences are not mutually inconsistent; they are on the other hand inherent; and therefore we can with scientific attitude speak of *unity* in Indian architecture and at the same time speak of *different styles* of Indian architecture.

Where do the styles of Indian architecture differ? How far do they differ? These constitute, I believe, an important and interesting subject for students of our architecture. For only after a realization of these can they understand the fundamental unity underlying it, and this can be understood if only a detailed study be made of the styles prevailing in various parts of India. One aspect of the subject with reference to Kerala architecture is the theme of this paper, viz. the conventions obtaining in Kerala with regard to the choice of a site for dwelling-houses, this being the most important of the preliminaries in connection with house-building.[1]

A site is chosen or rejected in accordance with certain widely accepted conventions, the more prominent of which are the proximity of temples, rivers and mountains, the shape, rise and dip of the land, the presence of certain trees in particular parts, and lastly, the nature and quality of the soil.

A site for a human dwelling is generally tabooed in the immediate neighbourhood of a temple, particularly of a temple dedicated to what are termed *ugradevatās* (fiery deities), except that intended for those who

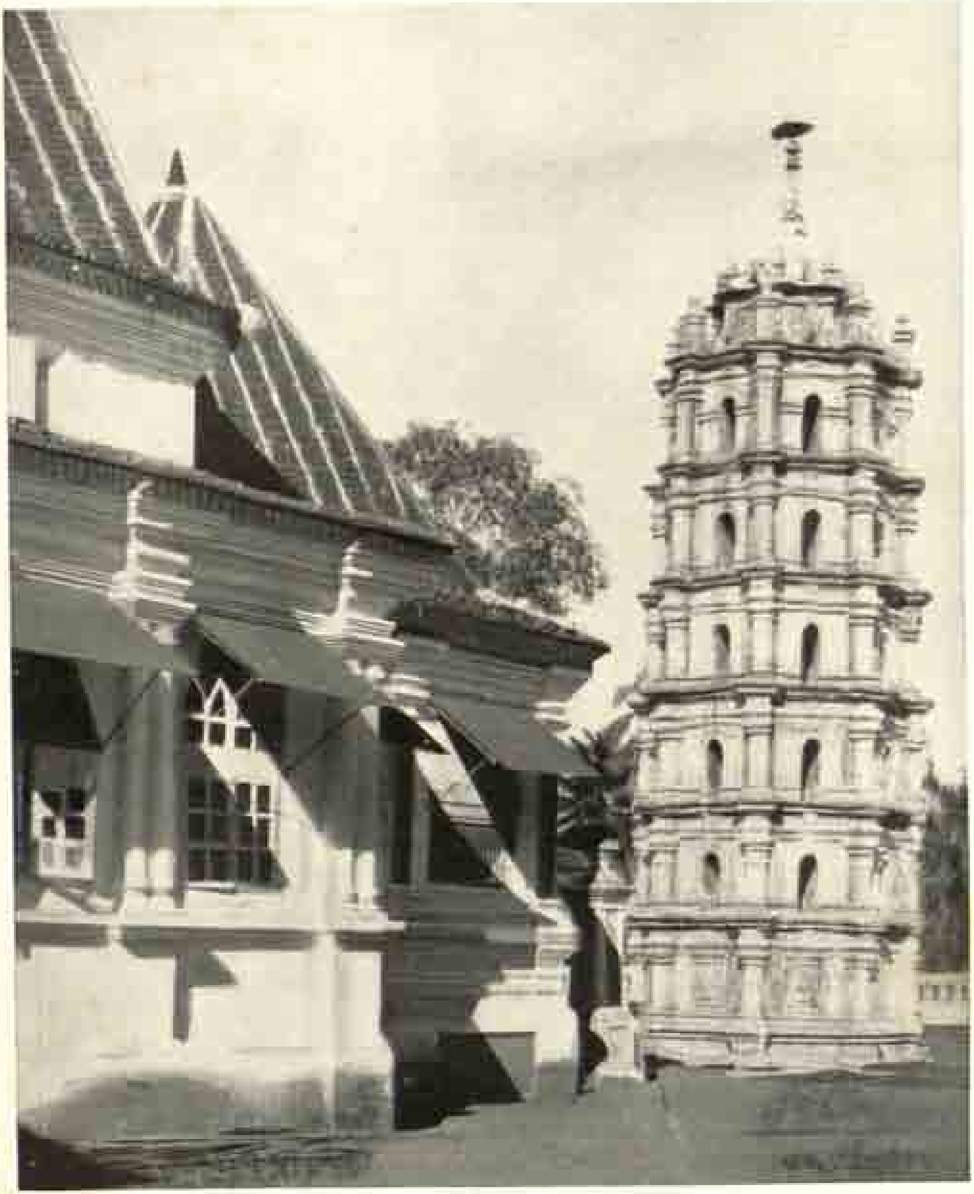
[1] The matter presented here is generally taken from the *Manushyālaya-Chandrikā*, the standard text-book for Kerala architects. The writer is translating it into English with critical notes and diagrams.

have to work in the temples. Even when necessity drives one to choose a site near a temple, he is advised to see that he does not select a site in the rear or in front to the right of such powerful deities as Bhadrakāli and Narasiṁha. Similarly, when the deity Aryan is located in a rising place, there should be no dwelling-house anywhere near. Again, it is the convention that a house built within the *saṅketa* of a temple should never be higher than the temple itself. The basis of this convention is pretty clear, for it is inconsistent to have a dwelling-house bigger than the house set apart for the god, who is supposed to be bigger than man himself. As regards the position of the chosen site with reference to the shrine, the basis of the convention may be found in the associations of the temple.

Similarly, sites very near rivers, oceans and mountains are condemned. Here the taboo arises from practical danger. Our river-systems are exposed to seasonal floods and danger arising from these is ever present and real, while the seashore has been subject to occasional land slides and land accretions. Mountain proximity is condemned probably for the reason that there is lack of security. The site in the vicinity of hermitages is tabooed to avoid disturbing the seclusion of the dwellers therein. The convention prohibiting the proximity of dairy farms must have arisen from reasons of health. In these cases also, then, a sufficiently satisfactory explanation can be given from the view-point of local conditions.

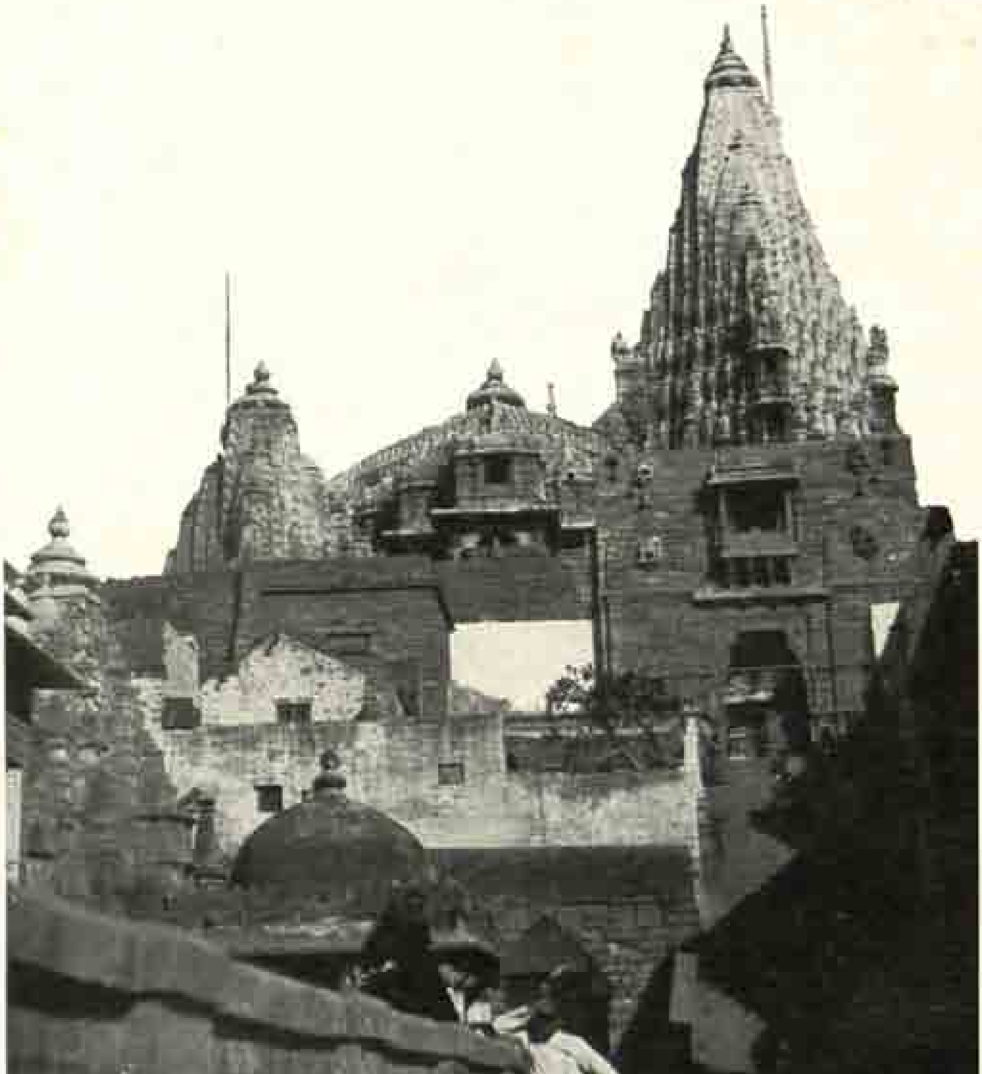
The shape of the site is an important factor in deciding the choice. A site having a circular crescent shape, or having three or five or six corners is to be tabooed. That site also is condemned which resembles a trident in shape or a sieve, or if it faces a corner. Evidently the condemnation of such sites is born out of well-developed tastes. What pleases the eye is always good and what does not please the eye is always bad. This principle is accepted by our architects and forms the deciding factor in all matters of doubt.

The nature of the surface of the site is still another determining factor. When the surface of the site looks like a fish, or the back of an elephant, or the head of a cow, it is not to be chosen. Again the rise and dip of the surface constitute another basis for the choice of the site. As a matter of fact, this constitutes the most important basis. The most general rule regarding this is the preference shown for such sites as have a northward or an eastward slope. Sites sloping in directions other than these, as well as those dipping into or rising towards the centre, are to



A HINDU TEMPLE IN GOA (DISTRICT)

Courtesy: St. Nihal Singh



TEMPLES AT DWARKA

Courtesy : Mr. H. C. Chakladar

be eschewed. This forms the most important of the conditions to be satisfied before a site could be chosen. Based upon these rises and dips, three are the main types that are to be chosen, those called by the names *go-vīthi*, *gaja-vīthī*, and *dhānya-vīthi*.

Another secondary factor that has to be considered in choosing a site is the presence or absence of particular trees in particular parts of it. *Bakula* (Mimesops Elengi) and *vaṭa* (Ficus Bengalensis) in the east, *udumbara* (Ficus Glomerata) and *chiñchā* (Tamarindus Indica) in the south, *pippala* (Ficus Religiosa) and *saptachchhada* (Alstonia Scholaris) in the north and *punnāga* (Rottlera Tinctoria) and *plaksha* (Ficus Infectoria) in the west, are generally auspicious in the site. The same trees in places other than those mentioned presage ill luck to the occupants thereof. It is particularly good to have *panasa* (Artocarpus Integrifolia) and *śrīvṛiksha* (Gmelona Arborea) and these are excellent everywhere. Trees presaging ill luck are never to be allowed to stand anywhere in the whole compound and they should be cut down.

Regarding the existence and planting of trees, sound practical advice is given. In the first place is laid down the distance where they should stand away from the house. All trees ought to be away from the house twice their own height, and a tree that does not satisfy this condition must be cut down even if it be a tree of gold. This is an eminently practical advice, particularly when it is remembered that Kerala is exposed to the full force of both the south-west and the north-east monsoons. The second principle relates to the nature of the trees to be allowed to stand in the site. Trees are generally divided into four categories according as they are internally woody, externally woody, all woody and not woody at all. The trees nearest the house—subject of course to the rule already laid down—must be of the first kind; the second kind must be next to it further beyond; and the third still further beyond it. The last variety, however, should be found nowhere in the compound chosen for a dwelling-house. Plantains, Joli jasmines, *yūthi* (Jasminum Pubescens), *champaka* and betel-creepers are everywhere auspicious.

The presence of trees, as we have already mentioned, is only a secondary factor in the determination of a site. For another convention would have it that if there are undesirable trees, or even desirable trees in undesirable parts of the compound, they are to be cut down.

A more important determining factor is the nature of the soil, which is to be examined from the point of view of its density, colour, taste and

smell. A soil that is rich and dense is generally held to be an excellent one for a dwelling-house. This density is to be determined by digging a pit, and if the earth dug out is put back and it fills the pit, it is *madhyama* (middling), but if it is more, it is *uttama* (best), and if it does not fill, it is *adhama* (worst). When a site has thus been chosen with reference to its density, it is to be assigned to different castes, as based upon the taste and colour and smell. A soil which is white in colour is good for Brāhmins, red soil for Kshatriyas, yellow soil for Vaiśyas, and dark soil for Śūdras. Similarly, a soil which smells of ghee is good for Brāhmins; of blood, for Kshatriyas; of food, for Vaiśyas and of liquor, for Śūdras. Again a sweet soil is prescribed for Brāhmins, astringent for Kshatriyas, bitter for Vaiśyas, and pungent for Śūdras. This preference is based upon the associations of the caste.

So far the site has been considered from the external point of view; the contents of the soil are no less important in determining its acceptance. If the site reveals, when broken by a plough, the presence of ashes, charcoal, husks, bones and hair, ant-hills and internal cavities, worms and other forms of life, it is to be shunned. Herein we see a taboo from the practical point of view connected no doubt with unlucky associations. Ashes, charcoal, bones, etc., indicate that it is a ruined site, if it be not a cemetery, and neither would be acceptable as a site for a dwelling-house. The presence of underground life and cavities also indicates no sense of safety. And hence these sites are to be shunned.

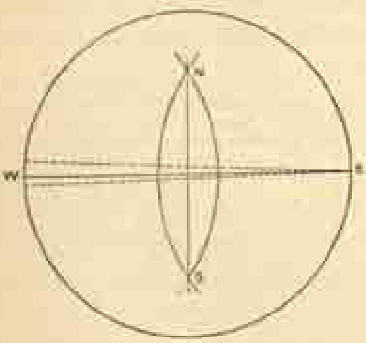
In the light of these and other conditions, a site is to be chosen. That forms an excellent site which abounds in trees rich with fruits and flowers and juice, which is even or dipping eastwards, is sticky to touch, is firm when sounded and is neither very hot nor very cold. Another essential condition is that it must be rich in water, and should preferably have a flowing water-channel around it. Where these features are absent, the site is *adhama*, and where these are found mixed up, it is *madhyama*. Apart from this, a general condition is laid down regarding the acceptability of site: The site chosen must ensure pure air and pure water and be pleasing to the eyes: this, be it noticed, is the most important deciding factor in the choice of a site.

As a matter of fact it is only very seldom that we come across an ideal or *uttama* site, one which satisfies all the conditions laid down. Generally sites have mixed characteristics. In such cases the acceptability or otherwise is to be determined by conducting the following experiment: Make a pit a foot and a half in dimension and place there

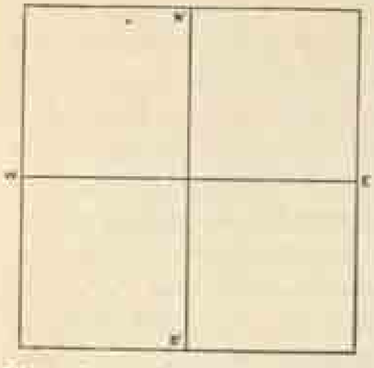
a pot filled with paddy. On the top of the pot, place a pan filled with ghee with four lighted wicks in four different colours, white, red, yellow and dark, each facing a cardinal point beginning with the east. Allow the wicks to burn for forty-eight minutes. If at the end of the period all the wicks are burning, the site is good for all castes, and if all are gone out, it is good for none. If some wicks are burning, the site may be assigned according to the colour: if the white wick is burning, it may be assigned to Brāhmins; if red, to Kshatriyas, and so on. There is still another experiment laid down and that is to fill the pit with water and put there some flowers of the *droṇa* (probably Leucas Linifolia) plant. If the flowers float about clockwise, it is good for all castes; if anti-clockwise, for none. If they halt against the sides half way, they are auspicious, but if they reach the corners, they are inauspicious.

The rationale of this experiment is not easy to explain. The most that these experiments may prove is the strength and kind of the underground gases that may be coming forth when the pit is first dug, if indeed such a thing is existing. But it passes one's comprehension how a site can be good for one caste, if it is bad for another. Evidently it is faith, pure and simple. We leave ourselves to be guided by chance.

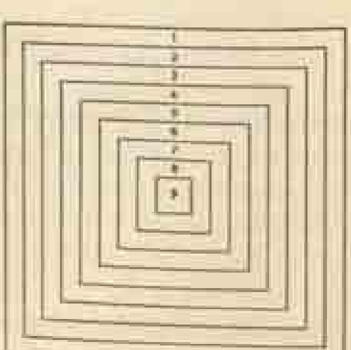
The site having thus been determined with reference to the conditions set forth above, the next step is its proper orientation. The traditional method adopted even now is as follows: Level in the centre of the site an area four cubits square and right at its centre fix a peg, called gnomon, 12 *aṅgulas* (*i.e.* 9 inches) long. With the gnomon as the centre and with a radius double its height, describe a circle by means of a cord. Then at a fixed time on an auspicious morning when the sun is in the northern horizon, make a mark on the circumference when the shadow of the sun cuts it on the western side. Similarly, in the evening, at so many hours before sunset as it was after sunrise in the morning, make a mark on the circumference on the east when the shadow cuts it. At the same time the next morning also make a mark on the west. Divide the distance between the two marks into three parts and move the western first point further up by one part. Join this new point on the west with the point already marked on the east. This line gives the due east-west line. Let these points be *W* and *E*. With *E* and



W as centres and with a radius more than half *EW* draw two circles intersecting each other, say at *N* north of the line and at *S* south of the line. Join *N* and *S*, intersecting *EW* at *O*. Produce *OS* and *ON* to *OS'* and *ON'* so as to make *ON'* and *OS'* equal to *OE* and *OW*. With the four cardinal points thus obtained, *E*, *S'*, *W* and *N'*, construct a square. Enlarge this square so as to occupy the whole site. Now in the square thus constructed, there are two lines *N'S'* and *WE* which *divide* the square into four plots, called the *Yāmyasūtra* and the *Brāhmya-sūtra* respectively, and the plots are called, beginning with the N'E *manushya-khaṇḍa*, *agni-khaṇḍa*, *nirṛiti-khaṇḍa* and *asura-khaṇḍa*. Of these four plots, the first and third are excellent sites for putting up dwelling-houses. If the site happens to be very big, then once again divide the first or third *khaṇḍa* into four, and of those choose the *nirṛiti-khaṇḍa* of the *manushya-khaṇḍa*, or *vice versa*. This gives us the approximate site in the compound chosen. The acceptance of this convention and strict adherence to it have had a very beneficent influence in that it saved Kerala from the street houses so common elsewhere in India.

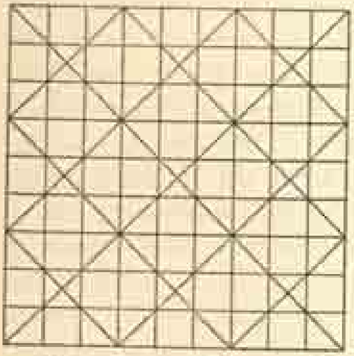


Having thus fixed up the particular spot for the building in the chosen site, the next item is the *vīthivinyāsa* (fixing of circuits). Construct a square in it and then divide it again into three hundred and twenty-four pieces. This will give nine rings one around the other, and these beginning from the external one are called Paiśācha, Daiva, Vaiśravaṇa, Yama, Nāga, Jala, Agni, Gaṇeśa and Brahma. Of these the house proper must not come within the Paiśācha, Nāga and Agni *vīthis*. Unless the compound chosen happens to be exceedingly spacious, it will be practically impossible to accommodate the house in these particular circuits. Hence in actual practice a convention is accepted that it is bad only if the house stands entirely in the bad circuits. To gain the required size and to escape the bad effects, the house is made to begin in an auspicious circuit and pass along an inaus-



picious circuit. Still another convention accepted is this: the consideration of circuits need not be made if the site is small, that is, less than seventy-two cubits in extent.

Two more considerations have to be noted before the foundations for the building are laid, and they are the avoidance of *marmas* and *sūtra-vedhas*, which are accepted everywhere. The actual site where the building is to stand having been settled, it is to be divided into eighty-one plots or *padas*, which will then have ten lines running north and south and ten east and west which are called *sūtras* (" threads "). Then draw the two diagonals and on either side of these draw two more diagonal lines, one passing through six *padas* and the second through three *padas*. Thus there will be ten lines passing diagonally and these are called *rajjus* ("ropes"). When all the *sūtras* and *rajjus* are drawn, there will be one hundred *marmas*, *i.e.* points where *sūtras* and *rajjus* or *sūtras* themselves cross each other. Now with reference to these *marmas*, the general rule laid down is that walls and pillars and pilasters should not be on these. And lastly, the central *sūtras* and central diagonals should not run against the central *sūtras* of the main wings and the diagonals of the corner wings. In a square this cannot be avoided, and so another convention is accepted and that is to give these an extension in length by eleven, nine, seven and five *aṅgulas*. Thus the actual foundations are to be laid with reference to the *vīthīs*, *marmas* and *sūtras*.



It will be seen from the above that there are numerous conventions laid down in Kerala with reference to the selection of a site for building a dwelling-house. Such conventions exist also as regards the other items of work. A detailed study of these in comparison with what obtains in other parts will prove an interesting subject of study for students engaged in the science of architecture.

INDIAN SCULPTURE

Of all branches of Indian Art, none is so difficult to understand and so difficult to sympathize with, as the schools of old Indian Sculpture. Their strange forms, their peculiar themes, and their special means and methods of expression characterize them as a unique and distinctive language of plastic thought, having very little in common with any schools of Sculpture in the West. Their peculiar conceptions and repellent forms are so remote from our modern conceptions of things that it has long delayed their appreciation in Europe; but thanks to the widening of the artistic horizon in the West, the art of the Indian sculptor has now won its votaries in Europe, and artists and connoisseurs have recently turned their admiring gaze to Indian Sculpture, and begun to appreciate its quality, as a new form of plastic expression and as the most characteristic phase of Indian Art. It is impossible to convey within the compass of a single essay anything like an adequate, or accurate idea of its various phases. And if I am unable to give a worthy presentation of a very large subject in all its varied aspects, I can only offer the apologies of an unworthy expositor.

As has been remarked above, the most characteristic phase, or form of Indian Art is a piece of sculpture, or more strictly speaking, an image, or an icon. But the origin and development of the art of the sculptor arises in India from conditions and necessities quite different from those prevailing in other countries, or other forms of culture. In order to understand the point of view and the function of the Indian sculptor, it is necessary to go into certain fundamental considerations. A sculptor is an image-maker and as such his function is severely limited and circumscribed by the injunctions of the iconographer, the priest, or the expounder of the image. An image is not an idol, or a fetish, that is to say, it does not stand for, or represent the Divinity Itself, but is an instrument of *sādhanā*, a diagrammatic help, designed to assist the worshipper or *sādhaka* to attain Divinity.[1] This could not be otherwise, as according to old Vedic ideas, the Infinite, the Formless, cannot possibly be rendered in terms of a finite form, or body. The great unconditioned

[1] An image or a *yantra* (device) is a piece of psychological apparatus to call up one or other aspects of the Divinity. Cp. *Divyāvadāna* (xxvi, ed. Cowell and Neill, p. 363): "Those who venerate the earthen images of the Angels do not revere the clay, but the Immortals thereby represented."



Fig. 1. VISHNU

Sāttvika Form

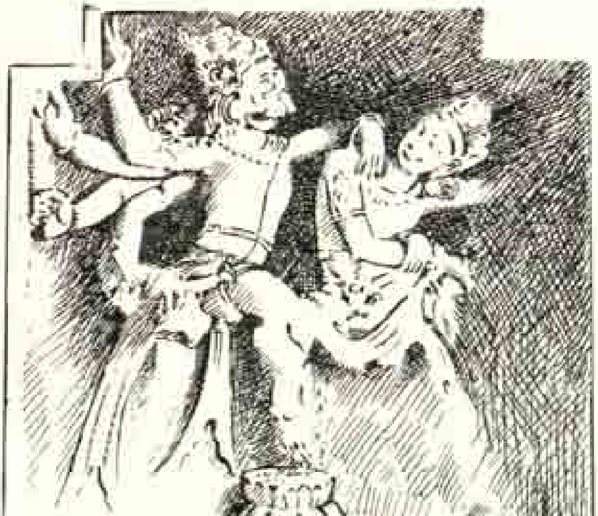


Fig. 2. DEATH OF HIRAṆYA-KASIPU, ELURA

Tāmasika Form of Vishṇu



Fig. 3. NARA-SIMHA, SOUTH INDIA



Fig. 4. SHEKMET, EGYPTIAN

Louvre Collection

Being, the Brahma, or Īśa, the all-pervading Principle, cannot be conceived as an image, conditioned by form, or space; in other words, there can be no representation, picture, or idol of the Divinity. To these uncompromising aniconic conceptions, post-Vedic speculations introduced certain concessions, or compromising ideas. If the Divinity could not be pictured, or visualized in a finite form, certain aspects of It could be symbolized and made accessible or comprehensible, for the benefit of the worshipper, the *sādhaka* or *upāsaka*. "*Sādhakānāṁ hitārthāya Brahmaṇo rūpakalpanaṁ*" *i.e.* for the benefit of the worshipper, the great Immanent Being condescends to assume an imaginative form. It is clearly understood that this symbol (*pratīka*) or image (*pratimā*) is not the Divinity Itself, but a suggestion, to the finite human mind, of a fragment of the Infinite Being. It is a mere aid, an instrument, a *sādhanā* for the attainment of *yoga* or union with the Divinity. And it is expressly laid down that the worshipper who considers the Divinity as a mere piece of stone or a piece of wood in which an aspect of the Divinity is suggested, is doomed to perdition. Even in the sculptors' handbooks—the *Śilpa-śāstras* of the *sthapatis*, the fundamental metaphysical conceptions and the basic psychology of images are not lost sight of. One text begins by enunciating the three aspects of the great Divinity conceived, firstly, as Īśa, the all-pervading Principle immanent in all the endless variety of the phenomenal world; secondly, as *nishkala*, the formless non-immanent Brahma; and thirdly, as *śakala*, or imaginative forms, or images. Now these images or imaginative forms of gods and goddesses are not the result of caprice or individual fancy of the image-maker or sculptor, but are such forms as gifted persons, seers, prophets, or *ṛishis* have visualized in the course of their search after the Divinity; they have set down the plastic conception in appropriate verbal pictures, called the *dhyāna-mantras*, or contemplative verses, by means of which the forms can be called up, conceived, or invoked. And the function of the image-maker or sculptor is to translate, accurately, in terms of a plastic form the idea conveyed by the iconographer. The integrity of the original conception must be jealously adhered to, as no deviation from the original form as visualized by the seer can be permitted. And in order to secure this accuracy and fidelity to the original visualization, the *dhyāna-mantras* or contemplative verses are accompanied by interpretative patterns or outlines known as the *lakshaṇas*, on which are based the Canons of Proportions setting out the dispositions of the various limbs, or gestures of each image. There is, therefore, no room for the individual artist to introduce

any innovation, or original ideas. He is in fact an illustrator or interpreter in stone, wood, or metal, of a form visualized or imaged by a seer, prophet, or *sādhaka*. And the success or otherwise of his function as an artist will be judged by the amount of his sincerity and his capacity to render, within the limits of his prescribed canon, the spirit, the psychology, the *rasa*, the elemental essence which pervades the conception of the image. He must, therefore, identify himself completely with the point of view of the *sādhaka*, the worshipper himself. And in order that the artist may be able to absorb himself and be completely immersed in his theme, the subject-matter that he is called upon to carve, chisel or cast, he is enjoined in the *Agni Purāṇa* (ch. 43), to fast and to perform certain purificatory rituals, and on the night before undertaking a given work, to make the following prayer: "O Thou Lord of all gods, teach me in dreams how to carry out all the work I have in my mind." The nearest analogue in Western Art is furnished by the practice of the great French sculptor Auguste Rodin who was credited with the habit of undertaking *séances* in order to invoke and get into the spirit of his subject. It is only when the mental image has sufficiently defined itself with adequate energy, that a painter or a sculptor is qualified to begin his task of realizing his dreams in visual forms. From the worshipper's point of view the usefulness, or the success of the image depends on its quality, or power of evoking the religious ecstasy, the desired union, *yoga*, or *samādhi*, the identification of the worshipper with his *ishṭa-devatā* or chosen deity. The usefulness of the instrument is the fitness of the means for the end, the most efficient performance of its appropriate function. In this sense, the most useful is the most beautiful. For the particular image which the worshipper requires for his particular *sādhanā*, the realization or fulfilment of his aim, may be an attractive form of the Divinity, or a repellent aspect of It. It may be *sāttvika*, a gracious form of the Deity, or *tāmasika*, a terrible conception of It. For, according to Indian ideas, "creation, preservation and destruction are equally the function of the Divinity. His image may be now beautiful, now terrible, but is always suffused with that vitality or living quality which transcends all limited conceptions of beauty and ugliness." As Dr. Rabindranath Tagore has put it, "its beauty has a quality which overwhelms and submerges all the beauty of created beings."

From this point of view, Indian Art cannot be expected to seek attractive forms for its own sake; its beauty is the resultant of a sincere and intuitive attempt to suggest or intimate the Divinity. The quality,



Fig. 5. VISHṆU (SEATED FORM). NEPAL.



Fig. 6. HANDS, FROM A NAṬARĀJA IMAGE



Fig. 7 AVALOKITESVARA

or beauty of Indian religious Art is the resultant, or inevitable bye-product of a spiritual intercourse—not a conscious attempt to create attractive forms. Let us examine this point of view by illustrating two different aspects of the same Divinity.

Take for instance an image of Vishṇu (Fig. 1) in a static pose, with the various limbs symmetrically disposed. In this flexion of what is known as the *samabhaṅga* pose—an attitude prescribed for the *class of images in a state of repose*, we have a presentation of the gracious aspect of the god.

In the famous panel (Fig. 2) of the Death of Hiraṇyakaśipu (Elūrā Cave) we have also the picture of the same deity in its destructive mood. The god is very powerfully conceived in an extremely dramatic pose—in the act of killing the demon-king Hiraṇyakaśipu. We have here a sublime presentation of the *bhayānaka rasa*, the emotion of terror—*Le beau dans l'horrible* or ' beauty in the terrible,' in the shapes and forms of horror.

By a somewhat exaggerated attention paid to a phase of Greek and Greco-Roman sculptures, a popular misconception had grown up, to the effect that nothing but the merely physical or sensuous aspects of beauty, illustrated in the types of Venus, Apollo, Eros and their analogues, can be an appropriate subject for the art of the sculptor. The *bhayānaka* and the *vībhatsa rasa*, the spirit of terror and horror, have also claimed interpreters in Western Art. At the risk of a little digression we cannot resist the temptation of alluding to a few examples:

One of the most interesting examples is furnished by Michael Angelo's famous study of the " Fall of the Rebel Angels " for a fresco in the Sistine Chapel. The repellent conception of the face acquires its beauty or *rasa* by an expression of the sense of horror aroused by the wrath, the vengeance of God. It has, indeed, no " beauty " understood in a narrower sense, for it is not " easy or pleasant to look at," it has no " sense-pleasure "; all the same it has an æsthetic quality of its own, not only as a skilful presentation or realization of a feeling of horror, but also as a suggestion of a different order or category of beauty—having a " difference in *feeling-import* from those implicit in the pleasanter types of beauty."

Similarly, a modern sculptor has attempted to render a somewhat repellent conception of the idea of the destructive energy of Nature in the symbolized form of the Spirit of the Storm, *La Tempête* by Rodin. It will easily recall the idea underlying the conception of the Vedic god Rudra, the Roarer, the god of storms, earthquakes, and fires, to whom some of the Vedic hymns are addressed:

"Praise be to Him, the Famous, the Mighty, that slays like a dread beast. O Rudra, being praised be gracious to the singer. Let thy missiles lay low another than us" (*Ṛ.V.* II. 33. II).

For the Indian Narasiṁha (Fig. 3), man-lion incarnation of Vishṇu, we have a very close parallel in the Egyptian conception of Shekmet (Fig. 4). Those who are obsessed with the idea that zoomorphic conceptions are impossible of artistic representation, have a formidable task to explain away the magnificent dignity, the peculiar atmosphere that such images call up, and the manner in which they uplift us to a world far away from our little earth and make us gasp for breath. It is one thing to say that I have no need for such conceptions, and quite another to suggest that the idea of such themes has not been artistically rendered, or, in other words, to suggest that the subject-matter itself takes it out of the limits of artistic representation. Fortunately, in the revised schemes of European æsthetics, it has been recently recognized that the subject-matter of a work of Art has nothing to do with its quality or beauty as a work of Art. It has to be judged from its own intrinsic merit, implicit in the work itself and the manner of its treatment.

Turning to an image of Vishṇu again for a moment (Fig. 5), we have to ask if the underlying conception of the image has been adequately indicated in this plastic scheme. It is no criticism of the quality of this piece of sculpture to assert that it does not convey to me the same *rasa*, the same æsthetic feeling which I derive from a contemplation of the Greek god Apollo, who represents the Greek idea of a god eealized in terms of a healthy human body. The Geeek conception of life for ever circumscribed the Greek sculptor's conception of form, and confined his vision of gods to a perfectly developed healthy human body. The "beautiful humanities" of the Greek Olympus—those finely handled "flesh-forms" are not in any real sense religious conceptions, or an intimation of the Divinity; they are but grand and beautiful men. For Greek Sculpture was, after all, the finest expression of Greek life—a sensuous, open-air, well-ordered life, largely spent between the gymnasium and the temple. It is a significant fact that it is still a matter of dispute whether one of the most famous statues of the early fifth century, the Choiseul Gouffier Apollo, represents a god or an athlete. Such a typical or normal human form is in fact the logical expression of anthropomorphism in its most literal sense—the making of gods after man's image.

In India, the Divinity has been pictured in terms of a superhuman type, such as we see in the image of a seated Vishṇu (Fig. 5). It is



Fig. 8. SIVA POISING THE TANKA



Fig. 9. ZEUS HOLDING THE STAFF



Fig. 11. KALA-SAMHARA (SIVA), TANJORE



Fig. 10. WARRIOR, MAHABALIPURAM

impossible to confuse the conception with the average type of human anatomy. The subjective conceptions of Indian images could hardly be represented in terms of a physically perfect healthy human body. It could only be symbolized in an ideal type and by forms not strictly in accordance with known physiological laws, but rather by forms which transcend the limits of ordinary human anatomy.

The Indian sculptor had, therefore, to devise certain artistic conventions and a special system of anatomy for the purpose of suggesting and intimating "something beyond the forms of created beings." He had set himself "to create beyond himself," as Nietzche puts it, to suggest and evolve the type of the superman. One of the first of these conventions is the adoption of a special scale of proportions known as the "Ten-head" measure, the *daśatālam*, for the height of the image of a god. The whole body is divided into ten parts or sections, each of which is equivalent to the unit of the size of the head. Both Polycleitos and Virtruvius, the Greek and Roman authors of the Canons of Proportions, adopt the law of "Eight heads"—the normal human standard—as the basis of their system of proportions, while the Indian sculptor adopts for his images—the *daśatāla*, or the "ten-head" measure; that is to say, he devises and adopts for images proportions which are above the ordinary human standard.

In the second place, he proceeds to suppress, as we see in the images of Naṭarāja (Fig. 6), all anatomical details, particularly at the joints of the body. The sculptor's texts actually enjoin that the hands and feet should be without veins and the bones of wrists and ankles should not be shown. The wrist does not show any indication of the joining of the bones underneath. It is rendered in a beautiful curve, the sweet lines of which are echoed and emphasized by the curve-lines of the *valaya*, the wristlets and bangles. In fact all the anatomical details are absolutely suppressed and eliminated. By the elimination of these features a smooth, tapering and rounded form is arrived at, which gives an abstract generalized anatomy that is far removed from the average human standard, suggesting the spirituality and abstraction of a super-terrestrial sphere. It is the suggestion of a psychic super-sensuous form, a form more subtly conceived than human form ever was, and invested with the ideal beauty of the Divinity.

In the image of Avalokiteśvara from Nepal (Fig. 7) the attenuated waist, and a generalization of the anatomy carried out much further than was ever attempted in Greece, producing an extreme simplicity of form

and contour, are part of a deliberate intention to suggest a type of abstract spiritual beauty far removed from the contact of worldly passions and desires. This is achieved and symbolized, as it were, by a type of body in which there is not an ounce of superfluous flesh anywhere, in which the bones underneath the flesh, and the veins have been suppressed, and the joints of the limbs are not made visible, as in the case of an ordinary mortal—thus obeying faithfully the injunctions of the texts prescribed for the image-makers, which direct the suppression of these anatomical details: 'The joints, the bones and veins must always be concealed.'

The third device adopted is the use of a series of peculiar gestures or 'finger-plays,' technically known as *mudrās*, each of some peculiar significance. Thus the *mudrās* in Fig. 25 are finger-plays known as the *kaṭaka-hasta*, generally used in depicting the hand holding a lotus. The left hand in Fig. 6 is the *lola-hasta*, the hand hanging down in repose, of which another form is the *gaja-hasta*. These different *mudrās* are associated with particular images—in a particular mood, or gesture—and are used as attributes of particular gods or goddesses for the purpose of identification.

Some of these gestures, attitudes and movements seem to our Western critics as artificial and unnatural. But, devised as they were as suggestive of a superhuman or a divine personality, they have been very properly conceived, in a manner antagonistic to the poses and gestures natural to man, under the sway of human feelings and actions. They have been devised as exquisite artifices for suggesting, as it were, a refinement of external action corresponding to a refinement of feeling.

When an Indian divine image holds in its hand a trident, it does not grip the weapon clumsily as the Greek Zeus from Hungary, placed side by side in our illustration (Fig. 8 & 9), but it playfully poises the *ṭanka* between its two fingers, the other fingers hanging out in a graceful angle. Some of these gestures, apart from their significance or symbolism, are wonderfully articulate with a grace and tenderness which are truly spiritual and non-human. These movements have been characteristically called by Śukrāchārya as *divya-kriyā* or divine actions, and they must be distinguished in their conventions from the movements and gestures of ordinary human beings. For it is by means of these departures and variations from natural poses that the non-human form could possibly be rendered in terms of the human shape. "The more human in expression, the less does Indian sculpture approach its own perfection." So greatly has this imaginary type influenced the conception of the sculptor



Fig. 12. AGASTYA, JAVA.



Fig. 13. KUVERA, NEPAL



Fig. 14. BRAHMA, MIRPURKHAS, SIND

that even in cases of representation of forms other than images of gods, he unconsciously adopts this generalized and abstract form of anatomy, which bespeaks a slender elegance and a spiritual grace.

I do not know of a better example of this than the series of warrior types (Fig. 10) depicted on the façades of the old Pallava temples at Seven Pagodas (Mahabalipuram). Note the broad, deep shoulders and the narrow contracted abdomen, almost recalling the wasp-waisted figures of old Cretan frescos. These athletic forms are not derived from the models at the gymnasium, or borrowed from the types of players on the football ground; they are related to and derived from the patterns of the Indian gods, and easily recall types recorded in such beautiful figures of gods as the *Kāla-saṁhāra* form of Śiva in the Bṛihadīśvara temple (Fig. 11). It is difficult to say whether the beauty of the conception is derived from its exquisitely balanced pose, with its four hands in fine equilibrium, its subtly modelled anatomy, or the inwardly conceived gracious expression of the face, which is absorbed within itself, wholly unrelated to or moved by any expression of anger, hatred, or sorrow; for although by the gentle movement of the left foot the god kills as he tramples on the little demon, the symbol of time or death, he does so with a detachment and absence of emotion which wonderfully suggests a sense of power, without any shadow of a sense of vulgarity or brutality. The demon of death dies at the gentle pressure of his toe, without any effort or striving, as if in obedience to some immutable law, rather than by any conscious exercise of any physical powers. The *kāla-saṁhāra* aspect of Śiva represents a *tāmasika* or terrible phase of the great god. But almost in terms of the same anatomical phraseology, a sentiment of peaceful inward serenity, a *śānta rasa*, is expressed in the portrait of Saint Sundaramūrti, pictured in a moment of supreme exaltation. The type is figured with the same broad chest and thin waist. The finger-plays are posed in nervous sensitive gestures, under the sway of a spiritual emotion.

Yet it is not by the use of a conventional anatomy, a thin-waisted frame or exquisitely posed figures, that the Indian sculptor attains his consummation. He is as happy in expressing spiritual values through his thin-waisted figures as through those with thick waist and stout proportions. In the magnificently conceived figure, say, of a *guru*, a *ṛishi*, an old Aryan sage, the spirituality of the expression is not a bit discounted by the use of a body characterized by an almost Falstaffian waist. The gaze of the saint is fixed inward and the massive dignity of the whole

body emphasizes the absolute immobility of the soul within, in which all manner of restlessness sinks and dies in sleep (Fig. 12).

It is impossible to render in more realistic terms a truer picture of an inner spiritual realization, a state of *samādhi*, a consciousness of identity with the Divinity—which can never be described in words, and which is only hinted at in the *yoga-śāstras*.

In the pot-bellied god Kuvera, the *kalasodara* (Fig. 13), a somewhat similar type of anatomy is adopted to convey a beauty of form and pose of remarkable charm and dignity. In this figure all the limbs balance and harmonize in a scheme of plastic composition which has a logic entirely of its own. A subtle sense of restraint and a skilful welding of the different plastic values of the limbs keep the artist from stepping into the abyss of the grotesque, or the quagmire of the ludicrous.

The same sense of exquisitely dignified utterance pervades the conception and execution of a singularly fine image of Brahmā (Karachi Museum), the symbol of creative energy in Hindu mythology (Fig. 14). The treatment of the drapery is reduced to a minimum indication, and the suppression of all irrelevant details produces a soft, supple and rounded form, which is beautifully capped by the skilfully poised heads that by a marvellous use of the matted locks appear to be organically related to one another, without any suggestion of the grotesque. The three heads sit on the shoulders without any sense of abnormality, being artistically strung together in a happy and harmonious unity.

The same sense of logical unity has received a more accomplished execution in a later image of Brahmā (Fig. 15) of the Southern Indian School, coming from one of the Chola temples of the tenth or eleventh century. It is a seated image of the god, very delicately modelled and sensitively posed. The perfect chiselling of the front face, of oval shape, with a sharp nose and heavy underlip, very skilfully echoed and emphasized by the two other heads, express a profound mood of meditation with wonderful artistry and power. The right leg hangs down in a pose that places the foot at a point which furnishes an artistic device to indicate the plumb-line of the *Brahma-sūtra*, the vertical axis running thr ugh the centre of the composition, with reference to which the limbs, the other elements of the composition, are skilfully related. The extra pair of heads and the extra pair of arms help to add a subtle sense of weight and balance to the whole composition and build up a sense of static equilibrium, which very happily translates the idea of serenity and repose, the underlying motif of the iconographic conception.



Fig. 15. BRAHMA, CHOLA PERIOD

equally in each of the three faces, though all of them are representative of carefully differentiated types of character. If we take them one by one, the profound stillness of this face, loudly told in the exaggerated closeness of the lips, haunts us and infects us with their message of peace and bids us close our own lips. If the spirit of the Divinity was ever induced to lodge in material forms, it must have made such moving stones its temporary habitation.

If one may be permitted to make a useful comparison, what a world of difference separates the idea immortalized in the last picture from that conveyed in the head of Zeus, the great god of Greek Olympus (Fig. 18)! In spite of the aggressive display of curling locks and overpowering beards, the conception utterly fails to convey any sense of the Divine, and is empty and almost hollow in its physical and objective outlook.

To return to the really Olympic heights of Indian philosophic thought, the plastic interpretation of *samādhi*, the ideal of spiritual absorption, is as much a fundamental feature of Hindu as of Buddhist sculptures. The Dhyānī Buddha from Java (Fig. 19) is a commentary in stone, and a plastic parallel to the words of the *Bhagavad-Gītā*: "Like unto a lamp that flickereth not in a windless spot, is the mind to be set at rest." The posture of a perfect bodily equipoise answers and begets a perfect restful mental pose. Only by strenuous effort and passionlessness can this peace and the realization that is its end be attained. This concrete crystallization of a spiritual mood was developed into a form so perfect and inevitable that it remains after more than 2,000 years one of the most inspiring and satisfying symbols created by man.

Hindu sculptors have also contributed to Indian Art types corresponding to the idea and the ideal embodied in the last example.

In the head of Śiva (Fig. 20) we have a magnificent symbolization of the spirit of meditation. Śiva is the great Yogī, the dreamer *par excellence* of the Hindu Mythology, 'the Poet of Fathomless Silence' who loves to wake up after ages of dreaming and loves to destroy all life, only to give them a new and rejuvenated existence. He loves to decorate his matted locks with skulls, for they are the trophies of his victory over life and death. It is rare to meet within the boundaries of any schools of Sculpture such noble and significant expression of abstract philosophic thoughts.

On the other hand, the doctrine of *bhakti* or passionate love-service has given to Indian Sculpture a series of exquisite forms of semi-divine



Fig. 17. TRIMURTI (SADASIVA), ELEPHANTA



Fig. 18. HEAD OF ZEUS, DODONA



Fig. 19. DHYANI BUDDHA

Courtesy: Mr. O. C. Gangoly

incarnations in the canonized portraits of various devotees of Śiva and Vishṇu. We have already considered the image of Sundaramūrti, but another and a better example deserves our study. It is an unidentified Śaiva devotee of the Southern Indian School (Fig. 21). The supreme serenity and graciousness of the face lit up by a mysterious smile is undoubtedly the glory of the figure. The joint palms of the worshipper slightly suggests a forward movement in the upper part of the body. It symbolizes, rather than actually depicts, an eagerness to reach out to the Deity. This movement is somewhat discounted and held in check by the restraint and placidity of the face and the deadness and static quality of the repose of the trunk and the legs, which appear to rivet the figure on its lotus pedestal and stop all feelings of movement. And yet this exquisite lack of physical movement is emphasized and contrasted by a spiritual pulsation which appears to shake every part of the body from the top of the matted locks to the finger tips with a mysterious throb.

This interpretation in material form of a state midway between movement and tranquillity, a pose of ecstasy and illumination, is one of the consummate plastic inventions of the sculptors of the South.

This sense of motion in the midst of tranquillity—the quality of what Maurice Maeterlinck calls "active silence"—is very well illustrated in the head of the well-known stone image of the Buddha (Fig. 22) from Sarnath: A little attentive gaze will help one to follow how the outline of the face and those of the chin, nose, and eyes all merge and vanish in the centre between the pair of eyebrows. And even the lines on the neck, as those of the encircling effulgence round the head—'the halo of radiance'—are moving round and round, with the imaginary point between the eyebrows as their centre. The face is the picture of a silent and motionless sea, in which dancing waves have died in sleep. On this face it is easy to notice incessant marks of meditation to rise and fade away to sink into an unknown sea of Bliss. The voice of the mystic syllable of creation, *om*, lifts itself incessantly like the roar of the sea and melts incessantly into space.

The nearest analogue to this form of expression in Western Art is perhaps furnished by some of the saints and angels on the Cathedrals of France—with the characteristic Gothic smile, a symbol of an inward spiritual realization. In many a portrait of saints or apostles on the façades of Christian Cathedrals in France, the expression of the head is conceived not in a physical objective smile, but in an indication of a

subjective spiritual rapture—something very much akin, though in a lesser degree, to the expression of the faces of Hindu images of gods.

The Bodhisattva—'the Buddha to be'—as the Prince destined to attain *nirvāṇa*, with his load of jewellery and coronet, calls for a superficial comparison with the Apollo statues of Greece. The Bodhisattva is more a god already, while the conception of the Greek Deity is "human—much too human." It is after all the figure of an athlete, the presentation of a human form, very far from the idea of a superhuman being. The two have to be placed side by side only to indicate the great gulf between the two conceptions and the treatment. Their respective psychologies are poles apart. One is evidently the head of a man, the other obviously the head of a superman. The chasm between the Indian conception and the Greek widens when the Prince attains Buddhahood and shines in his exquisitely modelled and sensitive body clothed in the diaphanous robe of a *sannyāsin*, as the full-fledged Preacher of the Law—Buddha as *Guru* or the Teacher of the world, a benevolent distributor of the nectar of immortality to all the races of the Asiatic Continent.

It is this fully developed figure (Fig. 23) which formed the prototype of Buddha images in all countries of the Far East. This picture of a great Yogi was one of the immortal gifts of the Indian sculptor to the artists of the Far East. This particular example was excavated from the debris of a ruined monastery at Sultangunge in Bengal and may be classed as one of the greatest works of the late Gupta period, testifying to the great skill of the Northern metal-founders of the time, for the figure is about 7½ feet in height, made of copper cast in sections.

If Indian sculptors have carved in stone and cast in metal their ideal of the Divine, of the saint and the preacher, summarizing the thoughts of generations and epochs in single figures and unique conceptions which have remained for all times as superb monuments of Indian plastic thought, their genius has not failed to incarnate the great ideal of Indian womanhood. For the type of Indian womanhood—the image of their goddesses—the sculptors very quickly formulated a satisfactory æsthetic form, idealizing the national conception of beauty in very characteristic conventions. Excepting in Gothic Christian Art and in Italian Painting, particularly in the Italian Primitives, in the Art of Europe the study of womanhood has invariably centred round the representation of the nude female form and is rarely connected with the cult of mother-worship which, in India, is embodied in a creed that regards the Great Mother—*Jaganmātā*, the "Mater Greta" of Mediterranean civilization—as the



Fig. 20. HEAD OF SIVA, JAVA



Fig. 21 A SAIVA DEVOTEE
Cotton Collection

source and producer of the universe. Closely connected with this mother-idea is the doctrine which regards the woman or the female principle as the *śakti*, that is to say, the power and energy of the Divinity. Thus Śiva is regarded as powerless without Śiva-śakti—Durgā, Pārvati, Kālī. Similarly, Vishṇu or Nārāyaṇa, the Preserver, is helpless without his female energy, Lakshmī or Nārāyaṇi, who symbolizes earthly prosperity, or good fortune.

The sculptors are principally concerned with Woman the Mother, and Woman the Śakti or wedded wife, the spiritual consort of the Male Principle. Besides the mother and the wedded wife, Woman the Tempter is sometimes represented in Indian Sculpture, chiefly as *apsarās* or courtesans of the gods, and sometimes as *nāyikās*, types of love-heroines—the objective of human passion.

We will begin our study of the ideal of Womanhood as portrayed in Indian Sculpture with a magnificent conception of *Prajñāpāramitā* (Fig. 24). She is the personification of Transcendent Wisdom. She is the Śakti of Ādi-Buddha, who occupies the same position in Tāntrika Buddhism as Śiva in Hindu mythology. She is Nature, the concentration of every intellectual and physical power of matter, represented in a state of complete abstraction and personified as Wisdom. By her union with the acting spirit—Ādi-Buddha—are produced the Bodhisattvas and all the phenomenal universe. She, therefore, corresponds to the *Jaganmātā*, the Great Mother of Hindu mythology, sometimes very naïvely interpreted, as in the mystic songs of Rāmprasād Sen.

In the whole array of Indian Sculpture, there has hardly survived a finer type of Indian womanhood. The upper part of her body is unclothed, yet there is not a shadow of suggestion other than that of a lofty and sublime spirituality which elevates us to a higher plane of thought. In paying his homage to the beauty of the conception, one critic was led to characterize this image as the Venus of Milo of the East. The epithet is somewhat inapplicable as, beyond the superficial similarity that the upper part of the body in both the figures is undraped, there can be traced no parallelism, either in the underlying thought or in the treatment of the two conceptions.

In Venus de Milo, the Greek masterpiece of the great apotheosis of physical beauty, there is no conception of woman conceived as the mother, or even as the wedded wife, as the counterpart or reflexion of the Male Principle. It is instead the worship of the physical passion, hardly calculated to elevate humanity. Yet the face of our Buddhist

goddess, radiant in her youth, is no less captivating in the beauty and serenity of her physical type. She attracts, however, by a quality of beauty which is very remote from the Greek conception. She is the embodiment of a great spiritual energy—typified in a youthful body, incarnating not physical charm, but a spiritual power, the source of inspiration of her mate, the great Ādi-Buddha.

Umā, Pārvatī, Gaurī, or Śivakāmī, conceived as the Śakti of Śiva, stands almost precisely on the same footing. The type conceived by Southern Indian sculptors is very typical of feminine beauty, as worshipped and interpreted in Indian Art (Fig. 25). In her static pose, so magnificently balanced by her beautifully posed hands, she is the very incarnation of youthful energy, and embodies a type of beauty which can only have a spiritual significance. She is seated in an attitude technically known as the *sukhāsana*, or the happy pose, and the finger-play in her right hand represents the *siṁha-karṇa-mudrā*, imitating the ear of a lion, the gesture which is the symbol of a dialogue with her husband.

Somewhat similarly posed, but differently conceived, is a little copper-gilt statuette of a Buddhist Tārā which comes from Nepal (Fig. 26). Its easy grace and elegance are emphazied by an extreme simplicity of treatment. Her cloth held in place by a jewelled belt, adheres to the contour of her body, while the thin transparent wrapper on the upper part is indicated by a line and does not encumber the beauty of her torso. The oval nimbus round the crowned head adds to the dignity of her *trivaṅka* pose. But the metal sculptors of Nepal have bequeathed to us a series of elaborately ornamented images more characteristic of the peculiar style of Nepal.

The Art of Nepal stands in a somewhat unique relation to the main stem of Indian Art. Originally inspired and developed by the stone sculptures of old Magadha and the school of Gupta Sculpture, Nepal received strong reinforcement from the Buddhist Art of the Pāla period (10th to 12th century), and was in intimate relationship with the Art of Bengal and Gauḍ for a long time.

As we began with the remark, the Indian sculptor has not wholly neglected the charm of women understood in a physical sense, with its inevitable sex-attraction. Indeed, Woman the Enchanter and Seducer of Man has received adequate sculptural representation, principally as decorative devices on the façades of temples pictured in the forms of alluring *yakshiṇīs*, captivating *apsarās*, and seductive *nāyikās*.



Fig. 22. TORSO OF THE BUDDHA IMAGE, SARNATH



Fig. 23. BRONZE IMAGE OF BUDDHA

The ancestors of these female types of *yakshiṇis* and *nāyikās* have to be sought for and derived from the early lineage of Bharhut and Sanchi. In the well-known example from Sanchi (Fig. 27), we have a very spirited rendering of the type sometimes loosely identified as *apsarās*, but more accurately, representing a *vṛikshakā*, or a dryad, the presiding spirit of trees. The later Saṁhitās refer to some of the trees being the homes of the *gandharvas* and *apsarās*. The *Mahābhārata* refers to these tree-nymphs as *vṛikshakās* and *vārkshis*, as goddesses to be worshipped by those desiring children. The story of the legendary origin of Pāṭaliputra refers to the marriage of a student with the maiden of a Pāṭali-tree. As an auspicious symbol and emblem of vegetative fertility, she is fittingly represented, as a captivating young damsel, in an alluring and rhythmic gesture—a very part and parcel of the tree, of which she appears a waving and captivating branch. And we may almost ask her, by repeating a passage in the *Mahābhārata* which enquires:

> " Who art thou bending down the Kadamba tree
> A Devatā, a Yakshī, a Dānavī or an Apsarā?"

In a more static gesture and serene pose, the same type of female figure is reproduced in an early sculpture of the Mathura school. It is a remarkable masterpiece of the Early Indian school of the Kushāṇa period. It is a caryatid or a pillar-figure (Fig. 28), performing the function of a column in an architectural composition.

As compared with the somewhat tiresome uniformity of the series of *yakshiṇis* recovered from the various old sites at Mathura, our figure here offers many novel and distinctive qualities, both in the type represented and in the treatment of the figure. Carrying a basket of wicker-work on her head and some objects in her hands, she stands exquisitely poised in noble and dignified repose. She wears the suggestion of a happy smile on her face, which is the very reverse of the indecent coquetry of the smiling *yakshiṇis* of Mathura. The upper part of her body is bare, but is hardly tinged by any kind of erotic suggestion. She is the very picture of a *naïve* simplicity and unstudied grace. A significant detail is the rows of bangles and anklets almost covering her arms and legs, recalling similar ornaments on the dryads from Sanchi to which this type is undoubtedly related. The heavy anklets on the legs seem to rivet the figure on the pedestal and emphasize the feeling of static repose—which is an inevitable plastic logic—and thus help the figure very happily to perform the function of a caryatid, in its sure sense of stillness and immobility.

Somewhat less aggressive, but more captivating in their quiet beauty and in the restrained repose of their attitudes, stand a series of three *nāyikās* on the façade of a temple at Bhuvanesvara (Fig. 29). Though obviously erotic in their motif, they easily recall in the serenity of their pose and the gracious restraint of their facial expression the galleries of Gothic Angels on the Cathedrals of France. Not derived from any actual models from life, they summarize the Indian ideal of the feminine form and the elements which answer to the poetic conception of female beauty, very minutely detailed and described by Kālidāsa and other Sanskrit poets.

The sex-relation of man or woman attains in the crucible of Indian philosophic thought a mystic and mysteriously religious symbolism. According to the doctrine of many Vaishṇava sects, as in many phases of Tāntrikism, the worshipper is forbidden to render his devotion to the mere male deity in the isolation of single blessedness. The god is inseparable and even impotent without his energy, his *śakti*, his wife, his spiritual counterpart. From the worshipper's point of view, it is always Śiva *and* Pārvatī, Nārāyaṇa *and* Lakṣhmī, that are happily expressed in such well-known compounds as Umā-Maheśvara, Lakṣhmī-Nārāyaṇa, Sītā-Rāma, and in an earlier stage of evolution, in the composite form known as the Ardha-nārīśvara, in which the two are one and inseparable, for the one must co-exist with the other.

In the ordinary Hara-Gaurī or Umā-Maheśvara conception we have frequently the picture of a pair of lovers locked up in embrace. In the conception of the Ardha-nārīśvara the two principles are merged (*avyakta*), but about to emerge (*vyakta*). It represents a stage in iconographic revelation, which emphasizes the fact that " Each is both." It is something like the picture of Adam at the moment when Eve was created from his rib.

The *vyakta* or differentiated form of the two phases of the Divinity can be very conveniently studied in the beautiful figures of Umā-Maheśvara (Fig. 30) met with in bronzes of the Pāla period (11th century). Of Śiva's four arms, one embraces Pārvatī; another, with the fingers in *tripatāka* pose, lifts her face to meet his gaze; the two other hands carry the usual emblems. Pārvatī is seated on Śiva's left thigh, instead of at his side; her right arm embraces the Deity's neck, while the left hand holds a mirror. The group is supported by a lotus seat (*padmāsana*) borne on a stem which rises from an oval pedestal. Branches from the stem support, on expanded flowers, small effigies of Gaṇeśa and Subrahmaṇya. The erotic rapture is transfused, as it were, into a spiritual ecstasy, and makes



Fig. 24. PRAJÑĀPĀRAMITĀ, JAVA



Fig. 30. UMĀ-MAHEŚVARA



Fig. 26. BUDDHIST TARA, NEPAL

us forget all ideas of sex. It is a sex conception etherealized and elevated to a non-sexual plane. The *mithuna* or the sex-motif in Indian religious thought, as in Indian Sculpture, is a mere symbol, on which hang great spiritual truths.

Even in such secular treatment of various phases of the *mithuna* a sex-motif is resorted to, only to indicate a philosophic and religious doctrine: "The two are one." The male and the female essences are the obverse and reverse phases of the same principle. An embracing couple, in the elevating idealism of the Indian language, in words as in stone, is only a symbol of the great philosophic truth, unity in duality. In the Indian religious literature the sex-symbolism is frequently resorted to, in order to picture the ecstatic rapture of the reunion of the lesser being with the greater Being—the final absorption of the *jīvātman* in the Brahmātman.

To summarize the results of our study, we find Indian Sculpture is not concerned with naturalistic representations, narrative, descriptive, or picturesque anecdotes. It is almost wholly absorbed in symbolic representations of philosophical truths, religious dogmas, or subjective experiences. The vocation of the Indian sculptor is not to depict particular or transient aspects of Nature, but to represent deified principles of the essence of Nature, and to record in imaginative form the dreams of an epoch, or the ideals of a race.

Form, for its own sake, has hardly any significance for the Indian sculptor. He uses them as concrete and convenient symbols of his religious ideals. He had no need, therefore, to transcribe laboriously the physical types of actual forms of men, women, or animals. He does not copy from Nature, but derives his images and types from the great storehouse of his own imagination, and shapes them into forms most appropriate to express the ideas and ideals of his religious life—dreams of gods and goddesses, denizens of spiritual worlds, *yogins* and superhuman beings, striving to migrate from the world of humanity to the higher planes of superhuman life.

As we began by suggesting, the Indian sculptor never intended his images of Divinities to stand for any conscious production of beauty or works of Art. They carved and created these forms from a necessity of their own—for the purpose of realizing certain religious or spiritual ends; and if they are works of Art, they are so without any conscious intention on the part of their producers. Indeed all real works of Art

and beauty can only be the product of spontaneity rather than of any conscious efforts.

The dreams that Indian philosophers and thinkers have dreamt, the artists have realized in concrete forms. And many of these dreams were matters of personal experience to the artists. "For none can portray the gods but those who have themselves seen them." Anyhow the Indian sculptors were able to completely identify and absorb themselves in their themes; otherwise it would not have been possible for them to visualize them in such easily apprehended forms.

If we are to relate the values of Indian Sculpture to other forms of Art, we may say that it has the remoteness of the Egyptian school, the religious saturation of the Gothic, the surprising freedom of archaic Greek Art—before the Greek genius became obsessed with the idea of transcribing actual human forms—and lastly, it has the sincerity and the convincing expressiveness of Primitive Art, understood in the best sense of the word, namely, invested with a *naïve* sensibility to react intuitively to subjective forms, without the sophisticated encumbrances of scientific knowledge.

As a great French sculptor has pointed out, by their novel conceptions and imaginative use of forms the Indian sculptors make a new and distinguished contribution to the Art of the World. When the demand was made on them, the Indian sculptors brought the gods nearer to the hearts of men. They have not lost their vision yet, nor their skill. And if the music of their chisel is silent for a while, they are awaiting the new generation to formulate novel forms of images to suit the needs and conditions of modern times; and when the demand is made again, the chisel of the Indian sculptor will begin to sing anew, on stone and on metal, and the music of his chisel, like the curling smoke of the worshippers' incense, will again mount up to the heavens—*and fetch down new gods.*


Fig. 27. VRIKSHAKA (DRYAD), SANCHI


Fig. 28. CARYATID, MATHURA



Fig. 29. NĀYIKĀS, BHUBANESVARA



Fig. 30. UMĀ-MAHEŚVARA, PĀLA SCHOOL

THE INDIAN PAINTER AND HIS ART

Practice precedes theory. And long before anything like an account of the technique of painting was evolved—in fact, the use of script came very late to record anything, even if it were there waiting to be recorded—there was the hand of primitive man at work incising figures on bone and horn and painting pictures of the bison and deer in his cave dwellings. The most important prehistoric or protohistoric paintings in India that rank in power of delineation with those of the Magdalenian period in the caves of Altamira in Spain and the drawings of the Bushmen in South Africa, are perhaps those in the Raigarh and Mirzapur caves. But these constitute prehistory of great antiquity, with which the link of historical painting is lost and unknown.

The most ancient paintings known to history are those in the Ramgarh caves and these date back to the second century before Christ. The frescoes at Ajanta, Bagh, Sigiria, Sittannavasal, Ellora, Conjeeveram, Tanjore, Tiruvanjikulam, and those at Tirumalaipuram recently discovered by Professor Dubreuil,[1] constitute an art gallery for an intelligent study of the practice of painting as influenced by theory. To the painter of India who is a master of theory, these paintings form a practical guide in the practice of the art. And such tips as the masterpieces of old masters give are as valuable to the painter as the methods of sketching and laying colours that books and theory propound. It is such a bestowal of equal attention on theory and practice that Bhoja so strongly advocates in his *Samarāṅgaṇa-sūtradhāra*: "Some know the purport of theory (*i.e.* the science); some others do the actual work; since both (*i.e.* theory and practice) are not as clearly understood by one as the obvious existence of the *āmalaka* fruit held in one's hand, therefore the person who knows theory has no knowledge of the work, and the one who knows the work lacks a knowledge of theory; he who knows them both is the best painter" (Chap. 74). Theory as the record of the experiences of older masters has its own value, and a study of it is most useful as a step forward in the progress of art, from where the beginner in the field of art could climb higher up without the loss of time involved

[1] The latest discovery of paintings in the caves of Badami by Dr. Stella Kramrisch is published in the *Illustrated London News* of 8th August, 1936. These belong to the golden age of Indian Painting and are on a par with the best examples from Ajanta.

in the trials and failures that beset the older workers, profiting at the same time by their sage advice and special methods discovered after years of labour. Sir Joshua emphasizes this in one of his Discourses in the lines: "If we were forbidden to make use of the advantages which our predecessors afford us, the art would be always to begin, and consequently remain always in its infant state; and it is a common observation that no art was ever invented and carried to perfection at the same time." This pertains to the study of the styles of old masters. But the study of the style involves the method as well, and the recorded literature of the methods of work in painting and sculpture constitutes the science or theory of art. The enthusiasm of the ancient Indian art student in learning the theory of art propounded by experienced masters is quite clear in the words of the painter addressed to the prince in the *Tilakamañjarī* (p. 135): "I, who am not yet become an adept in the science of art, should be taught by you who have mastered (lit. crossed the shores of) all sciences." The tradition in India has always been, for a study of the text-book, an intelligent understanding of it and simultaneous regular practice corrected and modified by advisory criticism from art experts, critics and masters. The standard text-book on painting was the *Chitrasūtra*, of which we know definitely nothing more than the name and the fact of its having been the most popular book for study. In the *Kuṭṭanīmata* we are told the various standard books on various arts studied by Mālatī, and the *Chitrasūtra* is specially mentioned. This book, as the name implies, refers to the science of painting and sculpture. But no book of that name has so far been found among the different books that deal with *śilpa* except the chapter in the *Vishṇudharmottara* which has an identical title. This book is dated by Dr. Kramrisch as belonging to the Gupta age, and if that could be held, it would be sufficiently old to warrant the reference in the *Kuṭṭanīmata*.

Apart from the practice and study of standard books on the subject, there was a regular learning of the special secrets of the art from the *chitrāchārya*, *i.e.* art-master. So important was this piece of schooling considered in ancient India that we have Bhoja leaving entirely unwritten in his *Samarāṅgaṇa-sūtradhāra* a whole section of singular importance, for the only reason that that information is to be got by the student from his regular master, who could best judge how worthy he was of that knowledge. "Manufacture of machines is not told (by me) to keep a secret and not because of ignorance; the cause for that is this—openly paraded, it offers no fruit...That person in whom there is pure quali-

fication, namely, hereditary skill coupled with teaching from the *guru* and study of the *śāstra*, knows how to prepare wonderful machines."[1] One would indeed be curious to know what attainments these *āchāryas* or masters could boast of; and there is a passage, unfortunately utterly fragmentary in form, that shows how masterly was the knowledge of the *sthāpatyāchārya* (master of architecture): "That person called Lalitālaya (who had learnt work?) from the sculptor called Māndhātā, who was a wonder even to the invincible adepts (in art), and (was learned?) in the essentials of the great truths of the excellent science of architecture ...who was proficient in the realm of architectonics (treating of) the construction of sixty-four modes of mansions...who (could make for?) use vehicles, seats and couches (bedsteads), who was adorned (as it were) by the thirty-six characteristics of an *āchārya* (master-craftsman)..."[2] The proficiency of the sculptor in ancient India was not lop-sided. Sculpture and painting are sister arts of architecture only in a subsidiary sense, since the latter covers both as the principal art supplying scope for them; and as such they take important places, though only as handmaids of architecture. Frescoes, mural paintings, carvings in high and low relief and many figures even in the round, form part of architectural decorations and are more or less important limbs of the main structure. It is in this sense that all *śilpa* works treat of sculpture and painting, *chitra*, *ardhachitra*, or *chitrābhāsa*, in subsidiary sections of works that deal mainly with architecture. In fact, one of the four minor Vedas given in the *Bhāgavata* is *Sthāpatyaveda*. "He created in succession from his faces facing the east and so forth the *Āyurveda*, *Dhanurveda*, *Gandharvaveda*, which was his own, and *Sthāpatyaveda*."[3] This includes its own minor limbs, sculpture and painting. So when we come across a passage in literature voicing the greatness of a great architect, it is his knowledge of construction, carving, and manipulation of the brush that is simultaneously praised. Carvers, again, in one medium, for instance stone, were not lacking in skill in others such as wood, ivory or metal. A proof of this is given in the case of the ivory carvers of Vidiśā, who carved one of the exquisite piers of the southern gate of the Sanchi tope. "The workers in ivory of Vidiśā have done the carving,"[4] runs the inscription. That such masters of art possessed extraordinary powers of even foretelling the fate of the constructions they made, of

[1] *Samarāṅgaṇa-sūtradhāra*, Vol. I, pp. 175, 176.

[2] *Avantisundarī-kathā*, pp. 7, 8.

[3] *Bhāgavata*, III. xii. 38.

[4] *History of Fine Arts in India and Ceylon* by Dr. V. Smith, p. 372.

which we have a number of instances in fanciful stories abounding in every part of our land, does not appear too incredible even to the most fastidious critic in whom reason is awed and incredulity overcome by the very stupendousness of their skill in their art. The most classical instance of such powers of a sculptor is found in the *Mahābhārata*, where is foretold the future of the elaborately built magnificent sacrificial hall of Janamejaya. "While that sacrificial hall was being constructed, the wise architect, who was an adept in the science of architecture, said, 'In the place where this planning has been begun, the sacrifice shall not be fulfilled on account of a Brāhmaṇa.' "[1]

Such were the *śilpins* of old. And naturally comes the question, how did they look like? That is a piece of curiosity that requires some satisfactory answer. As has been stated before, to know of the others, it suffices us to know how one class of *śilpins* looked like. The same *śilpin* generally possessed in himself a knowledge of many arts. There is a passage in the *Atthasālinī* which talks of *śilpins* versed in two, three, four, six and even seven arts,[2] and there was not much difference in the general appearance of *śilpins* versed in different arts. Though the material in which they worked was different, they were all students of form and fancy, and the same books guided their genius, be it when their chisel carved stone or metal, wood or ivory, or when their brush plied on wall or canvas. Of the ivory carvers of ancient India, whose skill makes even the proud king riding the elephant almost wish he were one of them to do such exquisite figures, there is a description in the *Atthasālinī*: "As a king riding his elephant in great state, and going about the city streets, might see craftsmen such as carvers in ivory, tightly swathed in one garment, their heads covered with another, their limbs besprinkled with ivory dust, making various forms out of ivory etc., and he being pleased with their skill, might say, 'Oh, sirs, how clever are these masters who can do such things...' "[3] Here we get a glimpse of their appearance and mode of work. Of the painter at work we have a similar passing reference in the *Mṛichchhakaṭika* (Act I), where he is described as surrounded by colour-pans: "I who used to sit in the inner courtyard and was fed on highly flavoured sweets through the affluence of Chārudatta, with a hundred pans around me, like a painter surrounded with paint-pans, from each of which I touched a bit and pushed back..."

[1] *Ādiparva*, ch. 51.

[2] *Atthasālinī*, edited by E. Muller (P. T. S.), p. 135. Trans. by Mrs. Rhys Davids, p. 179.

[3] *Ibid.* Text, p. 207. Trans., p. 277.

Some of these clever *śilpins* who were highly proficient in theory were known as *āchāryas* or masters. They were greatly revered and were entertained in courts of kings for teaching the princes and sons of noblemen the principles of painting and sculpture. Their functions were twofold: estimation of works of art and instruction in the theory of art. We have a passage in the *Tilakamañjari* (p. 144) where *chitravidyopādhyāyas* (teachers of art) and other amateur art critics surround the prince to help him in his critical estimate of the beauty of a picture: "Sitting in the vicinity of the bank of the pleasure pond in the temple of Cupid, and in the company of *chitravidyopādhyāyas* who were close to him and other townsfolk versed in painting who had come to see the painting out of curiosity caused by the assemblage of people there, he, examining the essentials of beauty in that painted piece of canvas representing a lady, and coming to no (definite) conclusion, spent the whole forenoon (engaged like that) refraining from all other amusements." Here is given the function of the *śilpāchārya* as art critic. His function of teaching is also learnt by us from passages like the one in the *Laṅkāvatārasūtra*, where Buddha likens himself to a *chitrāchārya* in his teaching attitude: "Just like a master of painting or his student, who specifies colours for producing a picture, I teach."[1] Without the master's explanation of the richness and permanence of colours, the particular use of particular colours of particular effects and so forth, the student of art would have no scope of learning their proper use. The glory of colour of the Venetian masters has always been a problem for European painters; and many are the cases where colour has been scratched off the canvases of great masters for knowing their secrets. "The picture is not found," says the *Laṅkāvatārasūtra*, "in the colours, nor in the canvas, nor in the plate; in order to make it attractive to all beings, a picture is presented in colours."[2] And how to make it attractive is a question. It is here that the experience of the master comes to offer an explanation. The pictures of an inexperienced art student would look 'painty,' and that is enough to damn them. Reflections, cloud trails, the rush of torrents, the dashing and rolling movement of foamy waves, the distant majesty of mountains enveloped in mist—these are some of the problems that engage the painter in his study of variety of colours; and a whole lifetime is taken by the portrait painter for mastering a

[1] Text (Nanjio's Ed.), p. 48. Trans., p. 43. The translation here of Daisetz Teitaro Suzuki is misleading so far as the word *namayat* goes.

[2] *Ibid.* Text, p. 48. Trans., p. 43.

subtle piece of colour in flesh-tint caused by a thousand local variations—light and shade and light in shade in different grades. "To make the picture attractive to all beings, it is presented in colours." But to make it attractive the artist should know *how* to present it in *proper* colours. And that is learnt from the *āchārya* and great personal experience.

It is not in a day that such skill in the art can be acquired. The gradual acquisition of knowledge in Fine Arts etc., is given in the *Laṅkāvatārasūtra*: "Mahāmati, it is like the mastery of comedy, dancing, singing, music, luteplaying, painting[1] and (other arts), which is gained gradually and not simultaneously; in the same way, Mahāmati, the purification of the Tathāgata of all beings is gradual and not instantaneous."[2] Years of practice give the sculptor or the painter a dexterity of the hand which is a marvel for witnesses of his work. Such perfection is called *hastochchaya*. Dāmodaragupta in his *Kuṭṭanimata* and Dhoyi in his *Pavanadūta* have used that word in a sense of supreme mastery of the hand to produce the best masterpiece.[3] The most difficult work of a master might sometimes appear very simple to the novice in the art, and he might attempt to do it with the same apparent easy stroke and dash to get a similar effect; but it invariably results in a hopelessly vulgar picture. It is therefore that Ruskin gives his sage advice to art students to refrain from "dashing lines" and to manage the lines slowly and accurately. "What is usually so much sought after under the term 'freedom' is the character of the drawing of a great master in a hurry, whose hand is so thoroughly disciplined that when pressed for time, he can let it fly as it will, and it will not go far wrong. But the hand of a great master at real *work* is *never* free; its swiftest dash is under perfect government. Paul Veronese or Tintoret could pause within a hair's breadth of any appointed mark, in their fastest touches, and follow within a hair's breadth the previously intended curve. You must never, therefore, aim at freedom."[4] It is indeed the most noble advice that can be given to students of art who would like to begin with "bold work." Ratnākara, the author of the *Haravijaya*, has shown how rare are those masters who can draw their lines with perfect control. "Only a few know how to give out good literature, just as only a few among those

[1] The word after *vīṇa* should be taken as *ālekhya* and not *lekhya*, since all the others are fine arts, and painting is one of the important arts and *ālekhya* is the word for it; thus the translation "writing" given by D. T. Suzuki should be changed into "painting."

[2] Text, p. 55. Trans., p. 50.

[3] See "Artist in Ancient India," *J.O.R.*, Vol. VIII, Pt. I, p. 41.

[4] *Elements of Drawing* (Everyman's Ed.), p. 9, footnote.

versed in the art of painting know how to draw a true line."[1] There may be many a *chitrakarmavid*, *i.e.* one who knows the science of *chitra*, but those who *can* actually produce a good picture in lines are few; and no wonder that *āchāryas* praise *rekhā* (*rekhāṁ praśaṁsantyāchāryāḥ*). It is not without reason, therefore, that skilled *śilpins* took great pride in the dexterity of their hand as remarked by Kshemendra: "The pride of warriors lies in their (lusty) shoulders; of the merchants in their (crafty) heart; of the *śilpins in their hand*,"[2] etc.

So much about the painter. We shall now turn to the art. Painting is given the name *chitrābhāsa* in *śilpa* works like the *Śilparatna*. A high place is claimed for it in the assemblage of arts and sciences by the *Vishṇudharmottara*; and therein is the exhortation for learning other arts as complementary to a study of painting. Among the *vinodasthānas* or arts for pleasure, as distinguished from those for profit, painting is counted as an important one. These are called *vaihārikaśilpas* in the *Rāmāyaṇa*.[3] In the *Śakuntalā* we have Dushyanta referring to painting as *vinodasthāna*: "O Chaturikā, this work of pleasure, *i.e.* this painting, has been only half painted by me." But painting, or any fine art for the matter of that, did not stop with being an art of pleasure. There was a professional to make it his means of livelihood. If, as we are told in the *Kathāsaritsāgara*, the consort of Prince Naravāhanadatta danced to the accompaniment of music played by her husband and put to shame experts in the art assembled in her palace, that gives us only a vivid idea of the keen interest of amateurs in such subjects. But the professionals were in the field using their art freely for earning their bread. There is the specific statement in the *Kuṭṭanimata* (verse 307) that the hetaerae learnt the fine arts only for seducing men to their homes by a display of their accomplishments: "Their diligence in the study of painting and other arts is for displaying their versatility and not for pleasure."

Just as literary works are divided into various classes and are styled lyrical, didactic, gnomic, prose, romance, etc., we have different divisions in painting as well. The *Vishṇudharmottara* gives the fourfold classification[4]—*satya*, *vaiṇika*, *nāgara*, *miśra*, which are no better understood

[1] *Haravijaya* XXXII. 70.

[2] *Kalāvilāsa* VII. 31. For more information about the *śilpin* see "Artist in Ancient India," *J.O.R.*, Vol. VIII, Pts. I & II.

[3] *Ayodhyā Kāṇḍa*, ch. I.

[4] Dr. A. K. Coomaraswamy discusses this in his article 'Nāgara Painting' in *Rūpam*, January, 1929.

by us with the help of the explanation given in that text itself than without it. The first and the last, however, are better understood than the rest. *Satya* is a painting true to nature (*yatkiñchillokasadṛiśam*); and *miśra*, as the name indicates, is a medley of the elements of the other three types. The *Abhilashitārtha-chintāmaṇi* of Someśvara gives us another classification of pictures into *viddha* and *aviddha*. The former is an accurate portrait while the latter is a drawing just to give an idea of the thing without any regard for accuracy. We have references in Sanskrit literature to the *viddha* type of pictures and sculpture, and the classification seems to be an early and accepted one. The very name *Viddhaśālabhañjikā*, *i.e.* portrait statue, one of the dramas of Rājaśekhara, refers to this type of pictures. There are many other passages in the *Tilakamañjari* of Dhanapāla where *viddha* pictures are mentioned.[1] There is also another distinction made among pictures by the *Abhilashitārtha-chintāmaṇi*—*rasachitra*, *dhūlichitra* and *bhāvachitra*. The first is a drawing made with colour solution; the second is a temporary picture drawn with colour powder; and the last is a picture depicting emotion. The *Śilparatna*, however, takes *rasachitra* to mean a picture depicting emotions and ignores the *rasachitra* of the above-named book. The number of emotions to be depicted in picture is given in the *Vishṇudharmottara* and it is nine; Bhoja gives eleven in his *Samarāṅgaṇa-sūtradhāra* with the addition of two *rasas*, *ahampratyaya* and *preyas*. The text of the latter book is corrupt, and it was kindly reconstructed for Dr. V. Raghavan by Mahāmahopādhyāya Professor S. Kuppuswami Sastriar. The *Nāradaśilpa* gives a division of pictures based on the surface on which they are worked—*bhaumikachitras*, *bhittichitras* and *prastarachitras*, *i.e.* paintings on the floor, on the wall and on the ceiling. Of these the first are temporary decorations of the floor in powders or colour solution and are the same as the *dhūli* and *rasachitras* of the *Abhilashitārtha-chintāmaṇi*. The other two are fresco paintings, and the division of pictures on wall and ceiling is rather artificial and, strictly speaking, is no classification at all.

Now to study a picture in detail. The question naturally arises, how is a picture made? A description of the process of painting a picture is given by Vidyāraṇya in his *Pañchadaśī*—how the canvas is prepared, about priming, sketching, colouring and so forth. The *śilpa* texts give us also a good idea about the process of the work. But the best information

[1] See "Art Notes" from Dhanapāla's *Tilakamañjari*, *Indian Culture*, Vol. II, No. 2, p. 209.

is got from a study of literature. We are told, for instance, only in literary works about the preliminary sketch called *varṇaka* and the final finish of the picture when "the eyes" of the figure "are opened"—*unmilana*. In one of the verses (no. 177) of the *Kuṭṭanimata* we are given to know of and about the *varṇaka*: "(The city of Pāṭaliputra) appeared like a *varṇaka* made by Viśvakarman (the architect of the gods) to show his (skill in his) art to Brahmā, who was questioning his ability to construct the city of the gods." The word *varṇaka* is profusely used in literature. It is also known as *varṇikā*, as it is found used in the *Hīrasaubhāgya*, *Gāthāsaptaśati*, etc.[1] Experimental sketches inferior to the *varṇaka* were known as *hastalekhas*. These were indeed practice sketches, whereas the *varṇaka* determined the form of the final picture. We know this nature of the *hastalekha* from the reference to it in the *Naishadhīyacharita*, *Hīrasaubhāgya*, etc.[2] A line from the *Naishadha* (VII. 15) as an illustration makes the point clear: "The assemblage of women, the former handiwork of Brahmā, has been surely the experimental sketch (*hastalekha*) for creating (finally) this lady, *i.e.* Damayantī." The final work in a picture is the giving of life by working the eyes of the figure. This part of the work of the painter is too well known to require special mention. Even to-day there prevails among some of the Buddhist shrines in Burma and other parts the "Eye-opening ceremony," when the eyes of the image of Buddha are painted in the presence of great assemblies and amidst great festive rejoicing, just before the installation of the image. With the Hindu painters and sculptors in India who work in the traditional methods, it is a common custom and especially so with those who paint religious pictures. Literature abounds with references to this process.[3] It is enough to cite one example from a verse of Ratnākara: "In the mansions of his enemies the figures painted on the walls, being left in a half finished state and therefore with their eyes not worked yet (no life being infused into them by the working of pupils etc.), took Lakshmī (prosperity) to be ephemeral like the night and day."[4]

Such is a picture in general worked first as a rough sketch and finished with final touches and the method of *unmīlana*. But what is a masterpiece and how is it achieved? There are pictures with technique

[1] See "Artist in Ancient India," *J.O.R.*, Vol. VIII, No. 2, p. 169.

[2] *Ibid.*, p. 168.

[3] See Sanskrit sayings based on painting (*unmīlitachitra-nyāya*). *Journal of the Indian Society of Oriental Art*, Dec., 1934.

[4] *Haravijaya* XVI. 65.

as their strong point; there are again those that have idea as their forte; but the very first are those that combine both and blend both the elements in harmony. Such are known as *charaṇas* in Buddhist literature. In the *Atthasālini* there is an elaborate description of the *charaṇa* giving us some idea of its nature: "In painting, the painter's masterpiece (*charaṇa*) is more artistic than the rest of his pictures. An artistic design occurs to the painter of masterpieces—that such and such pictures should be drawn in such and such a way. Through this artistic design there arise operations of the mind (or artistic operation) accomplishing such things as sketching the outline, putting on the paint, touching up, and embellishing. Then in the picture known as the masterpiece is effected a certain (central) artistic figure. Then the remaining portion of the picture is completed by the work of planning in mind as, 'above this figure let this be; underneath, this; on both sides, this.' Thus all classes of arts in this world specific or generic are achieved by the mind. And owing to its capacity thus to produce a variety or diversity of effects in action, the mind, which achieves all these arts, is itself artistic like the arts themselves. Nay, it is even more artistic than the art itself, because the latter cannot execute every design perfectly. For that reason the Blessed One has said, 'Bhikkhus, have you seen a masterpiece of painting?' 'Yea, Lord.' 'Bhikkhus, that masterpiece of art is designed by the mind. Indeed, Bhikkhus, the mind is even more artistic than that masterpiece.'"[1] The same is repeated in the *Saṁyuttanikāya*:[2] "Brethren, have ye ever seen a picture which they call 'Showpiece'?" "Yes, Lord." "Well, brethren, this so-called showpiece is thought out by the mind. Wherefore, brethren, mind is even more diverse than that showpiece." Mrs. Rhys Davids translates *charaṇa* as showpiece and Maung Tin as masterpiece. There seems to be not much difference between the two, and the comment added by Mrs. Rhys Davids to explain *charaṇa* makes the point clearer: "'A masterpiece,' commentary—*vicharaṇachittam*; the artists went about (*vicharanti*) exhibiting their work, which, it seems, was like Hogarth's 'The Rake's Progress,'" etc. And we can see that it is quite obvious that a painter would not exhibit a half-painted or a badly worked picture. Only good works are exhibited or taken out for show.

[1] *Atthasālini*, Text, p. 64. Trans., pp. 85, 86.

[2] Text (P.T.S.), ed. by M. Leon Feer, Pt. III, p. 151. Trans. by Mrs. Rhys Davids, Pt. III, p. 128.

And now, talking of exhibition and show, we may proceed to see how our art galleries fared in times of yore. Even regarding the *chitraśālās* or art galleries it is in literature that we come across references which give us an idea of their structure, contents, and so forth. A detailed description of the structure of the building where paintings are housed and of the kinds of arrangements for furnishing the galleries is given in the *Nāradaśilpa*, which but for this information is not very noteworthy as a *śilpa* text.[1] Though it is unnecessary to go into a detailed study of the *chitraśālā*—it has been dealt with in a separate paper, "*Chitraśālās*, Ancient Indian Art Galleries"[2]—it is nevertheless most important to consider two points which are noteworthy. There were two kinds of *chitraśālās*, the permanent and the itinerant; and among the permanent ones it is to be noted that there were different kinds, *chitraśālās* of the harem, of the bedroom, of the *jalamaṇḍapa*, and so forth, apart from the regular public art galleries. That there were itinerant art galleries we learn from a reference in the *Nalachampū* of Trivikrama. "When the camp...became...pleasant like the moving city of the Gandharvas by means of moving mechanical picture-houses beautified by pieces of flying flags just then hoisted......"[3] Such travelling galleries were for spreading art traditions and mutual exchange of ideas, style and technique. Considering these and many other facts that are too numerous to be discussed at length in this short paper, it cannot be gainsaid that our ancients led a rich æsthetic life and fully enjoyed the sweets of an earthly paradise.

[1] See the scholarly exposition of the *Nāradaśilpa* by Dr. V. Raghavan in *Jour. of the Ind. Soc. of Or. Art*, June, 1935.

[2] *Triveni*, Vol. VII, no. 2.

[3] "Artist's Jottings from *Nalachampū*," *J.O.R.*, Vol. VIII, Pt. III, p. 234.

THE CULTURAL ASPECTS OF INDIAN MUSIC AND DANCING

I

MUSIC AND THE AIMS OF LIFE

Music, as understood by some, is but the ordered succession of sounds with a view to producing a pleasing effect. But this does not in the opinion of others cover the whole field. For as manifestation is synchronous with motion and motion with sound, the motion of atoms in systems cannot but produce an ordered succession of rhythmic and well-balanced sounds. Perhaps this is what Shakespeare means by the 'music of the spheres.' Yet this is not the music we are accustomed to hear. The bare succession of sounds pleases only the ear, which is but one of the senses. Its effects have therefore a beginning and an end. Higher than that lie the fields of mind, of intellect, of reason and of spirit; and music, rightly understood, must be in touch with all these planes of thought and activity. Our Aryan forefathers indeed claimed for it almost everything—all the aims of life, the *purushārthas*. They claimed also that it was the easiest and the pleasantest path that led souls directly to the feet of the Great Father. Verily, this result is predicated of only one other means of attainment, namely, *Brahma-jñāna*, the knowledge of Brahman, with which, therefore, music is on the same footing.

ITS DIVINE ORIGIN AND ASSOCIATION

This is amply illustrated by the fact that our traditions—which are after all the real and most valuable history of nations—posit the origin of music not with man, but take it right up to the Highest Deity manifested in His triune aspect of Brahmā, Vishṇu and Maheśvara. Rudra is ever associated with song and dance; and the *vīṇā* (a kind of lute) on which he played is named Rudra *vīṇā* after him. It is the one the *vīṇkārs* of Northern India use. It suits man's voice, while the Sarasvatī *vīṇā* in vogue in the South is but an adaptation or a fitting up of the frets on the *tānpurā* board, and has a pitch to which the voice of the woman is naturally tuned. Mahādeva is, besides, *Naṭarāja*, the King of dancers. His dance is cosmic and it represents a process in that evolution. The *ḍamaru* or the kettle-drum on which he plays to keep time is, again, cosmic in its nature, representing the *ākāśa tattva* (principle of ether)

from which all sounds are produced. With Mahāvishṇu is clearly associated the flute on which he plays the Song of Life, the Song of Evolution, while the Gopīs, the cosmic powers, sing and dance in unison with waving hands and woven feet. Brahmā is ever engaged in the chant of the Vedas, bringing forth into manifestation the latent possibilities of souls in accordance with their *karma*.

The feminine aspects of these deities are ever associated with the *viṇā*, the classic and Vedic instrument *per se*. Pārvatī in her aspect of Mātaṅgī is represented as playing upon it, while Sarasvatī, the goddess of music and poetry, is inseparable in our thoughts from it. As for Mahālakshmī, the consort of Vishṇu, there is a very old song in her praise, opening with the words *vara-viṇā-mṛidu-pāṇi* ("with a beautiful *viṇā* in her delicate hands").

The regents of the worlds and systems, Indra and the *dikpālas*, as well as the denizens of the angelic worlds and intermediate spheres, like the *gandharvas* and *vidyādharas*, are all noted for their song and dance. Prominent among these we find the names of Nārada, Tumburu, Viśvāvasu, Chitrasena and others. The *maharshis*, sages and their disciples are all connected with the science and practice of music, and almost all our oldest and most valuable manuals on song, instrument and dance owe their origin to them.

FUNCTION AND SCOPE OF MUSIC

In India life has been saturated and consecrated with music. It meets us in the womb in the shape of protective chants and follows us through the various stages of life, enabling us finally to put away with ease the garment of flesh that has done its work. Sri Tyagaraja gives us the highest conception of music by showing that the *Trimūrti* attained to that stage of evolution solely through the *upāsanā* (worship) of *nāda* (subtle stage of sound). If Śiva is *nāda-tanu* and garbs himself in sound, as the Svāmī says, then music is the inalienable birthright of the soul, the *jīva*, which is fashioned after God and is meant to rise to His altitude in the fulness of time. His thoughts, his emotions, his joys and sorrows, his hope and despair, his gratitude, all find expression, as they should, in music peculiarly built to voice the same.

Music meant to the Aryan a different thing from what it is now to us. We give the name of musician to any one who has trained himself in song, instrument or dance. But the ancients understood by the word *saṅgīta* a perfect and harmonious synthesis and interrelation of song,

instrument, dance and expression. It has been so from the dim ages of the past; we find it even in the pre-Aryan civilization of the Dravidian. The latest work on it, which is known as *Śilappadikāram*, lays down distinctly and severely the mutual relations of the three elements. The commentator explains this by an example of the kite and its shadow: Nothing is in the accompaniments that is not in the primary object, neither more nor less. So music was ever meant to express and not merely to please. It spoke through song, through the human voice; the instruments faithfully reproduced the sound aspect and mellowed and intensified the effect. The rhythmic movements were such as were natural, and fitly represented the changing moods and brought before the eye a living picture of them. The expression took unto itself the part of depicting without words the emotions, feelings and thoughts free from any disturbing movements.

There is no nation that has not made music the handmaiden of spiritual aspirations. Joyous occasions, martial necessities and ceremonies, the celebration of mysteries by medicine-men and elders, have all been connected with song and dance even among the Red Indians of America and the dark races of Africa. But it has been given to the Aryan race, as represented by its Hindu colony in India, to exploit the realms of music to their utmost limits in the service of everything that its scriptures laid down as conducive to man's well-being here and hereafter. Towards that end, tradition assigns the origin of music, as the world has it, to the Lord Brahmā. "The Grandsire extracted music from the *Sāma-Veda*." For it is this Veda that has the full complement of seven notes, as against the others which have but three, though the other notes are latent in them to a large extent. That is why Mahādeva is known as ever delighting in the chant of the *sāman*. That is why Śrī Kṛishṇa says in the *Gītā*, "Of the Vedas I am the *Sāma-Veda*." The *sanātana dharma* (religion eternal) or *ārsha dharma* (religion pertaining to the sages) lays under contribution everything that the potency of sound could give unto man in the shape of *mantras* and without them the *Ārya* has no life.

ARYAN MUSIC—LAY AND RELIGIOUS

The Aryans, when they came to India, brought with them their music, lay and religious. The *Ṛig-Veda*, specially composed as invocations to the Powers to be present at the sacrifices, reveals to us another side of the social life through its references to song and dance and expres-

sion, with instruments to accompany. The *viṇā* of the *Ṛig-Veda* is but the thousand-stringed *yāḍ* of the pre-Aryan Tamils. Men sang and danced, sometimes dressed up as women. The sacrificer and his assistants were all as well trained in religious music as in rituals. The *Atharva-Veda* makes it a point that the *purohita* or the chaplain of the king should be thoroughly versed in the science of spiritual acoustics and also in the application of it to various purposes as embodied in the Mantras. He had a place in the war-chariot and had to chant the necessary charms that the particular weapon called for, as also the combinations of sounds to invoke the Powers to afford protection. We ought not to form a lop-sided idea of the people of that far-off age by identifying them solely and entirely with that aspect of life depicted in the religious scriptures. They had a human side too, although we have lost *en masse* the works connected with it. It is a mark of the values the Aryans attached to things that they let go almost everything relating to the temporal side of their existence and preserved only the essence and the ageless portions in the shape of *Brahma-vidyā*.

CONTACT WITH PRE-ARYAN MUSIC

As the Aryans spread over the broad expanse of the land, many changes came over their religious and secular life. The Mantras gave way to the Brāhmaṇas (commentaries) distinct in substance and garb. These, again, became subject to further cleavages. But during all their migrations they carried with them the music of the soul that was but dimly fashioned out in the Vedic chants and their practical application to the needs of men. When they crossed the Vindhyas and emerged into the South, however, they came across a life and civilization in whose dying embers they found much that was precious both in the fields of religion and workaday life. Large proportions of it were appropriated by the immigrants and music came in for its due share. This is preserved to us even now in the *Saṅgita-ratnākara* of Śārṅgadeva. He was born in Kashmir and finished his course of studies there. Later on he chanced to come to the South and set himself up as the court musician of the ruler of Daulatabad about the beginning of the fourteenth century. He found that he had newer worlds to conquer in the realm of music, and devoted all his time and talents to the study and assimilation of pre-Aryan music with which he came into contact in the South.

This pre-Aryan music is represented to us by the dying element of the Dravidian life and civilization which carries back its records, as

exoteric tradition goes, to many thousand years. Literature in all its three branches of poetry, music and drama flourished mightily in those days; and music in its turn held a very important place in the inner and outer life of the Tamil people even as early as the first of the three *Saṅgams* (Associations) founded and maintained by the wisest of their land. The following are the names of some of the works on music held in high esteem by the artists of those days: (1) *Agastya*, of which only a few *sūtras* or aphorisms are quoted in later works; (2) *Indra-kākaliyam*, a purely musical work by Yamalendra, referred to by Adyarkku Nallar in his commentary on *Śilappadikāram*; (3) in the department of drama, *Gunanul*, *Kuthanul*, *Jayanta*, *Chaitya*, *Pañchabhāratiya*, *Bhārata-senāpatiya*, *Bhārata*. Although only a few *sūtras* of these were accessible to the commentator and the rest had become obsolete even in his time, all these are reminders to us of a large body of literature on music, theoretical and applied, existing then and influencing the lives of the people through and through.

MARGI STYLE

Śārṅgadeva, however, found himself rather late in the day; for long before his time the mutual impact had begun; and the system of music that existed and died before his time, to which he gives the name of *mārgi*, shows, according to his tabulation of the *rāgas* (modes) of that school, some surprising facts to prove this assertion. Such names of *rāgas* as *drāviḍī*, *āndhri*, *kārṇaṭaka*, *devara-vardhinī*, leave behind them clear traces of distinct influences and interrelations between the musical systems of the Aryans and pre-Aryans. It is now hotly debated whether some names that we find in the pre-Aryan *rāga* classification are Sanskrit or Tamil; and it is hard to decide in some cases. Generally, what Śārṅgadeva, and before him Bharata, distinguished as *mārgi*, and that which came after it, seem to be not particular to any land or age, but the results of the natural course of growth or evolution in man.

What is *mārgi*? One sage defines it as that which was sought after by the gods and taught by Ṛishi Bharata to the *gandharvas* and *apsarases*, who exhibited it before Mahādeva and the other members of the Indian Olympus. Even then we come upon the basic fact that music was clearly and indubitably understood to be a combination of song, substance, instrument, rhythmical movement and expression. For Ṛishi Bharata conducted not a bare concert of sounds, vocal and instrumental, but a perfect combination of the three elements of the life of

music. The play *Lakshmi-svayamvara*, which is held by some Orientalists to be the earliest specimen of that kind of composition, was staged by Bharata himself. And Urvaśī, who acted Lakshmi, so far forgot herself in her love for Purūravas that she spoke his name instead of 'Purushottama' and was deservedly sent down among mortals to expiate her carelessness.

The *mārgi* school was purely and strictly scientific and allowed no room for the growth of man or the influence of time and conditions. But in spite of self-made laws, rules and restrictions, man grew and gradually moved farther and farther from his old, orthodox scientific moorings till he found himself in strange waters.

DEŚĪ STYLE

What is *deśī*? One writer aptly defines it as that which is particularly characteristic of countries, provinces, towns, villages, clans, families and even individuals. He mentions four sources of this change of style in music. Children, cowherds, kings and women—these love life and would not be denied its enjoyment. Rules and restrictions they brook not; they would have only the pleasures of life, the petals without the thorns; and so they take just what they want and let go what they cannot manage or digest. They sing as they are impelled to, from their hearts and not from their brains or intellects. The result is more to them than the process. That is how the music of the people grew and developed until the old, orthodox, moss-grown *mārgi* style was lost sight of, or if preserved, it was only to be remembered and spoken of as something good and great, but impracticable and unapproachable. Veṅkaṭamakhi, the writer of the latest work on South Indian music, the *Chaturdaṇḍi-prakāśikā*, goes so far as to assert that the music as we have it is all *deśī*, with no suspicion of *mārgi* about it.

And we note the very same work of evolution going on under our very eyes. The music of the Tamils that garbed so well and so beautifully the thoughts of the people and their relations to God, still bears in the printed books of our Sacred Collections the original *rāgas* and *tālas* (timings). But we find just below them the *rāgas* and *tālas* that the compiler or editor thought fit to drape them in. These do not represent in the least the system that is followed in the temples of Śaivite or Vaishṇavite persuasion or even by the musical experts when they condescend to take them up at the fag-end of their concerts. *Mārgi* and *deśī* styles jostle each other; and the same thing is observed with regard

to the compilations in Sanskrit and the vernaculars by the great masters The *Gita-govinda* of Jayadeva, the *Krishṇa-līlā-taraṅgiṇī* of Nārāyaṇa Tīrtha, the hymns of Rāmadāsa Svāmī of Bhadrāchala, the *devernāmas* of Saint Purandara Viṭhṭhala, the Tamil *kirtanas* in which the *Rāmāyaṇa, Mahābhārata, Skanda Purāṇa, Halasya Māhātmya, Peria Purāṇa* and other epics are sung, are now gradually slipping from their old, orthodox grooves and being fitted up in modern airs and measures; and this is *deśī* music with a vengeance. Even among the scientific section of South Indian music we find this change going on. The love of ease and the desire to avoid trouble of any kind lie at the bottom of what separates the music of our day from that of our latest books even.

HINDU VIEW OF NOTES

The Hindu philosophers and grammarians have given sound or *vāch* various aspects that might be called its different bodies, which impinge upon the atoms of the various objects in nature. This gives rise to corresponding effects upon the human body, physical as well as ethereal or spiritual, comprising the senses, emotions and thoughts. These varieties and possibilities of sounds spring from *praṇava* (Om), the vehicle of the Deity. It is His speech, and through it He carries on evolution, preservation and involution. Correspondingly, music which is sound, ordered and rhythmic, must act on the above bodies, the *kośa*s (sheaths) of the Vedāntins, and produce endless correlations and combinations of effects—what correspond to the *parā, paśyantī, madhyamā* and *vaikharī vāch*[1] of the philosophers, where *parā* stands at the level of Iśvara Himself and *vaikharī* is the speech of man. This lies in a way at the root of such popular expressions as *devabhāshā* and *devagāna*, the speech and music of the gods. Sound and colour form the elements of their language. The old writers on music derived the seven *svaras* (notes) from *praṇava* and brought it down through *mūrchhanās* (modulations), *grāmas* (scales), *varṇas* (syllables), *alaṅkāras* (rhetoric), *rāgas* and *prabandhas* (compositions), that form the concrete product of it all. The full complement of *svaras* with their varieties of sharps and flats was utilized by them to its utmost limits, and it is the greatness and speciality of the *Āryas* that they explored the possibilities of both speech and music, and graded them to suit the various levels.

[1] Forms of speech in a descending order of subtlety.

COMPARISON OF DIFFERENT SYSTEMS

Other countries in the world use the same notes, but with numerous limitations. (The Greek sextatonic corresponds to the *shāḍava* of Indian music, and the Chinese pentatonic to the *auḍava*). Fundamentally there is no difference or distinction between the music of the East and that of the West, between the music of the North and that of the South. Overgrowths set in somewhere about the beginning of the Dark Ages in Europe, and in India about the beginning of the Moghal period, when extremist influences—of Arabia, Turkey and Persia—came to act on Indian life and music, and intensified the details at the expense of the basic elements and common groundwork. Even now there are one or two musicians in the North who, without any previous knowledge or study or training of the Carnatic music of the present day, sing the Carnatic *rāgas*, pure and uncorrupted just as they were sung before the notes of other *rāgas* crept in and made them *bhāshāṅgas* instead of *rāgāṅgas*. Further, the musical literature of the so-called Northern school reveals to us almost all the important and outstanding *rāgas* of the South. This does not take into account the reciprocal action of the North and South that comes and goes but does not come to stay. Similarly, an impartial student and lover of music can trace in the music of the West so-called, many of the Indian modes of music and measures, though arranged upon a different plan and system that centres on the key-notes. Another fact which goes to support the above idea is that while the music of the South does not allow combinations of the sharps and flats in a melody-type (*rāga*) and productions in it, the music of the North pays no attention to this rule. From the very beginning the student is trained to sing the scales with the sharps and flats side by side. That is why we find in their *rāgas* the free use of the two varieties of *svaras*. This is exactly the most prominent feature of the music of the West, that sounds as a veritable discord to the trained ears of a Carnatic musician. His Northern brother craftsman is accustomed to this, but he does not follow or enjoy the music of the West, as he is not often accustomed to the frequent change of the keys that sounds to him as almost a musical heresy. Yet we have in the oldest Indian books on music a method that takes in the seven notes in order as the drone or the tonal or the key-note, and evolves out of them infinite combinations of *rāgas*.

An impartial study shows that every portion of music, theoretical and practical, finds adequate and parallel treatment and representation in the Tamil and Sanskrit works. And it is very difficult, sometimes

impossible, to state which took from which. Parallel thought might account for a very large portion of it. The *śrutis* (quarter tones), *svaras, mūrchchhanās, grāmas, rāgas*, full and defective, the *laya* (tempo) section of music, all find equally beautiful treatment in both, though under different names. We find among the Tamils something like 1200 *rāgas* in use, all derived from a base of 112, which, again, is but the seven-headed offspring of the sixteen primary *rāgas* called *perum pun*. These in their turn owe their existence to the four *jātis*, each of the four kinds of *vyāḷ*. We find there too the late system of seventy-two *melakārthas* of Govindāchārya and Veṅkaṭamakhi of the seventeenth century, though in the old language of *palais* and *alaku* (*śrutis*). There too we find that the *rāgas* have their congenial and effective times and seasons of the year, their dark and bright fortnights, their divisions of morning, evening, noon, midnight and twilight. There too we find that particular *rāgas* aroused particular kinds of emotions corresponding to the *rasas* (sentiments) of Sanskrit. Nay, certain *rāgas* were strictly set apart for certain kinds of lay and religious composition.

RĀGA-RĀGIṆĪ SYSTEM

Bharata's oldest mention of the school of six primary *rāgas* with their wives, sons, and their wives and children, finds a corresponding echo in the system of the Tamils too. It goes without saying that this school of *rāga-rāgiṇī* nomenclature is the root of the music of Northern India. But there too there are various schools and conflicting versions of it.

The thoughtful student of the origins of music cannot fail to come upon the basic principle of this dual classification of *rāgas*. It goes back to the very beginnings of evolution (if we could make such a statement, since it is not so much a circle as a spiral ever coming back upon itself but in higher gradations). Brahman and Śakti (Primal Energy), inextricably related to each other and representing supreme perfection, is the fundamental idea that finds later a more detailed and practical expression in the scheme. The *Ardha-nārīśvara*[1] is the ideal which the typical musician strives after. Man and woman complement each other to evolve the perfect being and an ideal musician is the master of the *rāga* and the *rāgiṇī*. A trace of this is left to us even to-day in

[1] A composite figure, half of which represents Śiva and the other half the goddess. Five of the seven *svaras* are said to have issued from the five mouths of Mahādeva, and the *shaḍja* and *pañchama* were given out by Pārvatī to make it a perfect whole. This is the *ardhanārī* element in music.

some of the *rāgas*, each of which is complemented by another *rāgiṇī* that mellows and lends a grace to it: *darbār* and *nāyakī*, *mālavagauḍa* and *nāthanamakriyā*, and so on.

ATTEMPTS AT CODIFICATION

The earliest record accessible to us is Bharata's *Nāṭyaśāstra*. In *nāṭya* or dramaturgy we find the harmonious combination of thought, song, instrument, dance, expression and speech. Next we come upon the *Saṅgita-makaranda* of a certain Nārada, assigned to the ninth century. It is certainly anterior to the *Sāṅgita-ratnākara* of Śārṅgadeva, already referred to, which is now the veritable *Manu-Smṛiti* of music—equally imperfectly understood and practised. In the sixteenth century Pandit Ahobila wrote his *Saṅgita-pārijāta*. A conference of musicians was held about half a century later to reconcile theory and practice, and the result was the *Svara-mela-kalānidhi* of Pandit Rāmāmātya (1550 A.D.). In another fifty years Govinda Dīkshita dedicated his *Saṅgita-sudhā* to Raghunātha Naick of Tanjore; and about 1614 A.D. came into existence the *Rāga-vibodha* of Pandit Somnāth and the *Chaturdaṇḍi-prakāśikā* of Veṅkaṭamakhī. These works are looked upon as authorities where the science of music is concerned. But neither in the North nor in the South do books like these lend any effective guidance or help to regulate, correct or improve the music of our day. The latest attempt is to bring together on the same footing the music of the North and the South on the basis of the *mela-rāgas* of Veṅkaṭamakhī. Attempts have been made to reduce the number of *rāgas* of North Indian music to ten *melas* or *ṭhāṭhs*—primary, full-complemented melody-moulds.

TEMPLES AND THE SACRED COLLECTS

Music in the East and the West was always in the close custody and guardianship of the highest in the land, those that sacrificed their individual interests to work for humanity, the priests of the temples and the keepers of their mysteries. They utilized it as the ladder for men to ascend to the gods and for the gods to come down and walk among men. In this connection a brief mention should be made about the Sacred Collects of the saints and singers of the Śaiva and Vaishṇavite persuasion. They are popularly known as *Adaṅgan Murai* and include the *Tevāram* and *Tiruvāchakam* that form the major portion of them; while the Vaishṇavite hymns are known as the *Divya Prabandham* or the *Four Thousand* or the *Tiruvoimoḷi*. They are together called the Tamil

Veda, since it is believed that the saints took out the heart and soul of the Vedas, which were in archaic Sanskrit and a dead-letter to the majority, and clothed them in the language of the masses—Tamil. These hymns are set to a system of music representative of the *mārgī* style and were meant solely to be sung and danced to and expressed in temples on stated occasions. Tradition has it that this style was handed down by the saints themselves through generations of disciples, until there came persecution by local kings that left no traces of this body of literature except ten verses of Saint Nammāḻvār. Long afterwards Saint Nāthamuni, at a place near Chidambaram, heard it by accident and traced it back to its source. By extreme devotion and prayer he managed to get into touch with Saint Nammāḻvār himself, who, it is said, taught him the entire collection in a superphysical state of consciousness. Nāthamuni instructed his two nephews in the art of singing them in the *mārgī* style and deputed them to make a tour of pilgrimage to the various shrines sung of by the *āḻvārs*, and sing at each place the particular verses connected with it. This led to many local devotees and artists taking instruction from these minstrels and keeping up the tradition.

Even now we may come upon in many of the well-to-do temples a body of men specially appointed to conduct the evening service in so far as the music portion is concerned. Down to a very late period the old Dravidian *vīṇā*, known as the *yāl*, was used for accompanying, while the time-keeping instrument was the *śuddha maddala*, a slightly elongated variation of the present *mṛidaṅga* (drum). But one has only to go to the Kerala province to meet great men on that instrument. Indeed we do not find vestiges of this pre-Aryan system of music at the present time in South India except in Kerala, where we come across not merely quaint instruments of *śruti* and *laya* but also the *rāgas* and *tālas* of the old world. The music of the *kathākali* preserves, and ought to preserve, the largest portion of what the *mārgī* system stood for in the ancient days.

Kāñchī, Srirangam and many other temples in the Tamil districts are credited with having at the present day attached to them a staff of experts trained to sing and express the sacred hymns of the *āḻvārs*. They are called *ārāyars*. The history of the Ādi Vaishṇava saints makes mention of one such, a favourite disciple of Śrī Yāmunāchārya. His real name we have lost sight of, and we know him by the name of his function, *vara-raṅga-gāyaka* (Tiruvaraṅga Perumal Ārāyar). We read of another such, by name Varamtarul Perumal Ārāyar. Śrī Yāmuna left as a legacy for the future teacher, Śrī Rāmānuja, the art and science

of the music of the *āḷvārs* with this *ārāyar*. Similar functionaries ought to have found a place in almost all the important temples of the Vaishṇavite and Śaivite persuasion, though at present the hymns of the Nayanārs are in the hands of other classes of people, less qualified, of course. Even to-day this clan of *ārāyars*—for they are hereditary now—have to sing and dance and express to large audiences the hymns of the *āḷvārs* with appropriate costumes. This is a necessary function lasting for ten days or so during the *vaikuṇṭha ekādaśī* at Srirangam, falling in the months of December-January of every year.

THE MONASTERIES AND MUSIC

After the decay of temple colleges and exhibitions, the *maṭhas* (monasteries) appropriated to themselves, along with the other functions of temples, the worship too, though on a small scale, as also the æsthetic element appertaining to it, viz. music. Hence do we find the monasteries supporting and maintaining the paraphernalia of music, vocal and instrumental like the *nādasvara*, among the items of religious service. Besides they receive, entertain and reward musicians from outside during the festivals and functions held annually, for example, the *guru-pūjā* (adoration of the teacher). Some monasteries have a regular staff attached to them. Thus religion, ethics and education kept music alive for a very long time through these endowed religious institutions; the more so in that the hymns of the saints were recognized as part and parcel of the daily service in the monasteries, but without the third element of music, viz. dance and expression, which they could not in propriety take in, since that section fell from the hands of sacred priests of the temples into those of degenerate representatives of the art. However, the heads of these monasteries were mostly connected with temples and held hereditary management and control over them; and this left in their power the choice of elevating music or debasing it.

UNDER THE PATRONAGE OF THE NOBILITY

With the decay of the monasteries and the line of work they set themselves to do, music fell into the hands of the upper ten of society—the crowned heads, the nobility, the plutocracy and the local magnates. They took to the material and æsthetic aspects of music, and naturally did not feel attracted towards the higher and spiritual phases of it. Yet there too it followed them by virtue of their being secularly connected with the temples as their trustees and managers. The later religious

aspect of church music, as found in the monasteries, connected with worship, continued to exist in some form in the palaces of the nobility. Yet the aristocracy and the capitalists maintained a purely lay staff of musicians, and this accounts for the predominance of that section of it in modern times and the decreased attention paid to religious music by the artists themselves.

However, the memory of old times and old ideals still clings to the profession and the public as well as to the patrons. The concerts, recitals and *harikathās* may be warped out of all recognition now; yet we find in them the old traditions preserved in the shape of pictures and images of our gods in the performance-halls. They are garlanded and lights and incense are burnt to them before the performance begins; and up to very recent times the performer, who is a musician pure and simple, began with an invocation or a prayer to Gaṇapati, the remover of all difficulties, to Sarasvatī, the goddess of poetry and music, to his chosen deity, and last, to the teacher who gave him the art. And at the end, we have the benediction sung to give a solemn and fitting close to the function. Further, a very large portion of the stock of the artists consists of songs dedicated to the One God under various names; even the secular and erotic pieces are imagined in some way to be connected with Him and His ways.

This is perceptibly intensified in the case of the *harikathās*, in which devotion, solemnity and serenity are the ruling emotions of the performer and the audience. There, from beginning to end, it is religious. In the opening invocations, the preliminary didactic discourse, the songs that occur in the body of the piece illustrating the devotion of the characters that come in it, cannot be, if the artist is a worthy one, any other than highly elevating, instructive and purifying.

This was characteristic of the South Indian stage and its music even within the recollection of the passing generation, where reguiar worship of the gods formed an important opening function corresponding to the *nāndī* of the Sanskrit drama. The subjects too were rarely outside the range of our scriptures; if at all lay, they were very closely allied to religion and morality. The closing of the function was attended with similar religious worship. Apart from this there was some kind of religious purification, if one may so call it, for the stage itself. Of course the stage decorations included very finely finished pictures of the various aspects of God and scenes depicting His greatness and glory.

BHAGAVATA OR HARIDASA

Turning to the North, we have the performances of the *bhāgavata* or *haridāsa*—the model on which the *harikathās* of the South are based by the musicians of the South. The *paurāṇika* who sits and expounds a particular book or subject has his limitations. He has no instrumental accompaniments, no music *per se* to illustrate, no chance of expression, no dance. As for the stage, it has no chance of moral exposition as such; the dance and expression are simply by the way, more attention being paid to the representation of actions and thoughts. Again, it has to meet the difficulties of training a group of people, attending to stage necessities and so forth. The actual *nartaka* (dancer) as such has with him song and dance and expression, but has no call to expound, to teach, to illustrate, to amplify. So the thought of the nation found a way to converge all these elements and bring out the most efficient and beautiful combination in the shape of the *bhāgavata* or *haridāsa*. He had to possess the learning of a scholar, the sacred lore of the *paurāṇika*, the eloquence of an orator, the excellences of an actor, and the merits of an expert singer, dancer and expressionist. He had to have at his command the tact and ability to suit himself and his art to the varying conditions of life in which he found himself. He had to acquire the secret of giving an exhibition within a very short compass of time, as also the power to expand it without any detriment to the proportion of the elements. Even now the *bāvās* of the old school in the North know how to give an exhibition in two hours, as also take up a story and deal with it during the whole period of a *chāturmāsya* (covering four months).

NATURE OF TRAINING

There were, and there ought to be in some places even now, regular institutions to train such religious preachers. A good course of grammar and poetics and poetry is followed by another course in music; and these are rounded off by a third course where the student is trained to tell a story and bring into it proportionate music and matter, religious and secular. The last portion of this training confines itself to what are called criticism lessons, where the student gives a *kathā* (recital) while the other students and teachers take notes and speak upon it at the end, giving hints for the artist to profit by. Later on he gives model lessons for the other students of lower grades to study and imitate.

This system was brought down from the North to the South by the Mahrattas. Ramachandra Goswami of Moorgaun was credited with

phenomenal powers in all these directions; and this many in the South have had the occasion to witness and profit by, one of them being the late lamented Krishna Bhagavatar of Tanjore. The *bāvā's* descendants come down to South from Gwalior now and then to give *kathās* at places where they have their endowed monasteries. They live a simple life, and take no fees except what is offered for the feeding of the poor at their residence, for they keep an open house. They preserve, as far as possible under the present conditions, the old ideal of plain living and high thinking, which endears them to the people of all classes.

The earliest recorded instance of this kind of work is held out to us in the oldest and grandest epic of the world, the *Rāmāyaṇa*. Maharshi Vālmīki was the highest type of it; and of this we have evidence through his disciples, Kuśa and Lava. Chapter IV of the *Bālakāṇḍa*, if read carefully, gives us a true picture of a typical *bhāgavata* or *haridāsa*. Perfect beauty of form and proportion, an expressive, flexible and responsive voice, unequalled mastery of the *gandharva-veda* (song, instrument, dance and expression), royal birth and training under the Maharshi—all these and much more go to make up what might probably be the oldest and the best specimen of a *bhāgavata* of Āryāvarta.

STREET SINGERS

One striking distinction between Western and Eastern music is that we find the latter inextricably woven into the very fibre of life, public and private, even as religion is to us second nature. Take, for instance, the mendicant who goes about the streets, or the little group that comes to our house. One and all make it a point to bring to us something that reminds us of things high and holy. He who is ignorant of music recites roughly the names of the Lord. He who knows music sings the pieces composed by the masters of old in Sanskrit and the vernaculars. He that can play any instrument uses it as an accompaniment. The *ektār* or the *tundina* of the South, with its single wire, is more effective, more telling and more consonant in the hands of a good craftsman than all the complicated paraphernalia of set musical instruments. The pitch, the rhythm, the volume falls upon the ears of the commonality with wonderful effect, almost magnetic in its quality; and the simple unadorned music of the man, with his quaint dialectical intonation and accents, sets off the quaint accompaniments. It is often more useful, more pleasant to hear from the lips of the ballad-singer some old creation like the *Bubbili patta* (historic) of the Andhra line, the *Hari Hari Nārāyaṇa* of the same

province, in which we have the quintessence of the epics, the *Nalla tanga pāttu* in Tamil (corresponding to the story of the Babes in the Wood, in a way), the *Nandanār Charitra* of the outcaste saint, or the *Desing Rājakathā* (Tamil, historic). All these are to the real lover of good and healthy music more valuable than the over-scientific performance of the music-halls.

SOME IMPORTANT SINGER SAINTS

Certain names shine like stars in a cloudless sky in connection with Indian music, as having from time to time reminded people of its real relation to religion, philosophy and true living. It is a peculiar feature of Āryāvarta that except in a very few cases almost all its saints were singers and its singers saints.

The earliest name we have within historic times is that of Jayadeva Gosvāmī of Bengal who lived in the twelfth century. His work, *Gītagovinda*, is the oldest recorded orthodox piece of music we have. It is anterior even to the *Saṅgīta-ratnākara*; and its music ought to partake of the *mārgī* system that was lost to Śārṅgadeva himself. The *Gītagovinda* had as its source of inspiration the tenth Book of the *Bhāgavata* where the life of Śrī Krishṇa receives full treatment. It is a mystic work, too mystic for the generality of the present-day poets, devotees and musicians. The author tells us that it is priceless to one whose heart is set on devotion, as also to one whose heart delights in fine creations of thought and imagination. At the end of the piece he assures us that there may come to him three classes of men—expert musicians, perfect devotees and highly inspired poets—who will find in his work everything that they want. This plainly indicates that the surface eroticism has underlying it a deep and rich vein of philosophy, devotion and mysticism. In the middle of the work he springs upon us a stanza that tells us that Krishṇa, the destroyer of ignorance and its brood of sorrow, took into his heart Rādhā who was bound hard in the chains of *sāṁsārika* or material existence. This gives us the key as to who Rādhā was meant to be and who Krishṇa. It is an allegorical description of the soul in darkness and tribulation, gradually groping and finding its way to the throne of Light and Life. This is a veritable Pilgrim's Progress of India. The *Bhāgavata* concept of Krishṇa and the Gopīs is taken up, and a certain aspect of it is worked out in detail. Like the Sufi mystic poetry and song, it is carefully fashioned and ramified so largely that it is impossible for any one except an initiate in its mysteries to follow the thread through and utilize it.

This, again, might be one of the many causes that brought into existence the Kṛishṇa cult of later times through Śrī Gaurāṅga, who developed considerably the practical aspect of the teachings. This, again, welled up in the hearts of such great inspired masters of devotion and music like Guru Nānak, Kavīr, Kamāl, Tulsī, Sūrdas, Mīrabāī and Haridās in the North. The saints of the Mahratta country echoed the spirit and form of it in their metrical compositions. Such names as Samartha Rāmadās, Ekanāth, Tukārām, Nāmadev and Jñānadev bear eternal witness to this kind of real and priceless service to the cause of music, and through that to the elevation of their brethren. The same work was taken up by Purandara Viṭhṭhala who spoke in Canarese his countless *Devernāmas*, so simple, so touching, so pregnant and so inspired. His name is dear to us for all times as the grandsire of South Indian music, to whom it owes almost everything as regards its technical and melodic aspect.

Next in order of time came Rāmadās Svāmī of Bhadrāchala, who lived and suffered for this cause, and told to an incredulous world that there is One in whom we live and move and have our being, the Father who looks after His children eternally. His *Kīrtanas* are still a household word in the Tamil land, though not to so large an extent as in the land of his birth (Andhra). Indeed the devotees in the South hold Jayadeva, Tīrthanārāyaṇa Yati, Purandara Viṭhṭhala and Bhadrāchala Rāmadās in the highest regard in an order of succession.

Tīrthanārayaṇa Yati, the *sannyāsin*, has sung in Sanskrit the life of Śrī Kṛishṇa as found in the *Bhāgavata*, and takes us on to the Lord's marriage with Rukmiṇī. It is in prose and song, unlike other compositions, and is evidently meant to be staged, since we meet with stage directions here and there. It is said that Jayadeva sang his *Ashṭapadis* while his wife Padmāvatī danced before the Lord in their humble home. Even so the Lord blessed the Yati; and the composer conducted the performance and kept time with his sacred staff on the water-pot.

Kshetrajña was a native of a village in North Arcot, who was early initiated in the worship of Śrī Kṛishṇa by an ascetic. He took his cue from Jayadeva and Tīrthanārāyaṇa Yati and composed his immortal *Padas* (about 4,500 in number) and dedicated them to Gopāla in his village. At present the highest experts in the field of song and expression recognize as their most outstanding texts the *Gīta-govinda* of Jayadeva, the *Kṛishṇa-līlā-taraṅgiṇī* of Tīrthanārāyaṇa and the *Padas* of

Kshetrajña. To sing these, to dance to them and express them represent the high watermark of attainment in the three departments of *saṅgīta*.

After Purandara and Kshetrajña came the three great composers, Tyagaraja, Muthuswami Dikshitar and Sama Sastri, who have been rightly regarded as the trinity of Carnatic music. They were contemporaries belonging to the first half of the nineteenth century and all the three were born in the same town Tiruvalur (Tanjore District), famous for its temple of Tyāgarāja. There is evidence to show that not only Muthuswami Dikshitar and Sama Sastri, but also Tyagaraja were brought up in the musical tradition which is derived from the great musical theorist Veṅkaṭamakhi. The personalities and styles of composition of these three belonged, however, to widely different types. About seven hundred *Kirtanas* of Tyagaraja, three hundred of Muthuswami Dikshitar and one hundred of Sama Sastri are now extant. The pieces of the three composers are characterized by the occurrence of the words *Tyāgarāja-nuta* (glorified by Tyagaraja), *Guruguha* (a name of Subrahmaṇya), and *Śyāma Krishṇa* (Dark-blue Krishṇa), which serve to identify their respective authors. The *Kirtanas* of Muthuswami Dikshitar have sometimes the additional peculiarity of mentioning (under a different meaning) the name of the corresponding *rāga*, as accepted in Veṅkaṭamakhi's system.

Of the three, the *Kirtanas* of Tyagaraja have appealed most to popular taste. He was essentially a devotee of Rāma, and his *Kirtanas* mostly refer to, and were inspired during, the ecstasies of ceremonial worship. Practically all of them are in homely Telugu and are in the form of touching appeals and intimate conversations addressed to the beloved Rāma in an innumerable variety of situations. What he sang and composed were the real thoughts of a man, his periods of struggle and strife, his joys and sorrows, his temptations and victories, his periods of utter darkness and grace, his views on men and things, and his experience of what they did to him. A rough idea of both the spiritual development of Tyagaraja and of the evolution of his musical style can be had from the internal evidence supplied by the *Kirtanas*; the earlier ones are often simple with a quick *tempo*, while the later ones have an exquisite charm and exhibit a mastery both in handling the *rāga*-theme and in the development of the emotional situation.

Muthuswami Dikshitar was a worshipper of *Śrī Vidyā* and a *jñānin* of great spiritual eminence. It is said that at a tender age he was entrusted to the charge of a *sannyāsin* who took him to Benares, where he underwent both spiritual and musical discipline. He was a versatile scholar,

widely read in the *śāstras*, and his *Kīrtanas*, which are all in Sanskrit, display a classic dignity of diction and fertility of imagery. They are all in slow *tempo*, and their movement has the majesty, power and poise appropriate to the cosmic setting of their theme. The range covered by them is very wide, touching innumerable aspects of the Divinity. He was both a singer and an expert player on the *viṇa* and in the musical execution and technique of his *Kīrtanas* he exhibits a gifted master's sureness of touch in displaying the main features of the *rāga* and in handling its development. Particular mention should be made of the quick *tempo* portions. In general he chooses intuitively just the right movement to suit the sense and *bhāva* (emotion) of a given phrase.

Sama Sastri, who was the oldest of the three composers, was a devotee of Kāmākshī, the goddess of Kāñchī. Fewer details are available regarding his life and personality. His compositions are both in Sanskrit and Telugu and are generally addressed to the Devī. His *Kīrtanas* are noteworthy not only for their *rāga-bhāva*, but as displays of rhythmic movement. He had a fine sense of rhythm, his predilection being in favour of *miśra* (mixed) *jāti*. He is also the author of many *svara-jātis* which embody various *tāla*-movements.

Tyagaraja, Muthuswami Dikshitar and Sama Sastri are fully representative of the lofty aspiration and many-sided spiritual culture of India. By their work the forms of Carnatic music have been elevated and transformed into stately vehicles for the expression of the noble fervour and spiritual passion of our sacred scriptures.

II

MUSIC INCOMPLETE WITHOUT DANCE

Music, as has already been pointed out, is incomplete without dance and expression, and so we find that all the ancient books on music have given a prominent part to *nartana* (dance). In fact, the oldest work on the subject, the *Bhārata-nāṭya-śāstra*, assigns a very inferior part to vocal and instrumental music, while it deals at length with dramatic representation and its various departments.[1] And Bharata is as it were the patron-saint of Indian music in general, and not merely of dance, as it has come to be assumed. He takes his place in the temples of the fine arts next to Sarasvatī alone.

[1] Bharata paid more attention to staging. His main outlook was educative.

Following Bharata, Śārṅgadeva,[1] who won for himself the title of Niḥśaṅka (he who has no doubts on the subjects he treats of), was the first to make a happy combination of Aryan and Dravidian modes, and in his hands *nartana* (dance) receives the fullest and most comprehensive treatment. He deals with the subject in the following order: How *nartana* came into this world from its abode in the heavens, its greatness and glory and the occasions when it is most relevant; the varieties of *nāṭya* (dance, acting) and their characteristics; the various kinds of *abhinaya* (acting), its division into the *laukika* (popular) and the *nāṭya* (dramatic) *dharma* (feature) and the two varieties of the latter; the description of *nṛitya*, *nṛitta* and their subdivisions; the varieties of *āṅgika* (pertaining to the limbs) *abhinaya* with the various movements of the limbs in minute detail; the *sthānakas* (situations), sitting varieties, sleeping varieties, etc.; the postures and their nature, the *maṇḍalas* ("circuits"), and the *lāsya* of the *deśi* school. Then details are given of the course of training, the selection of pupils, the teacher, the *sampradāya* (transmission of the teaching) including the various methods. Then the subject of the *rasas* or sentiments is dealt with in detail, each being treated in relation to its *bhāva* (emotion), *vibhāva* (exciting cause) and *anubhāva* (indication). Next the *sāttvika* (pure) *bhāvas* are described, and this closes the subject.

VARIETIES OF DANCE

The *tāṇḍava* is a variety of dance invented by Śiva and taught by him to his attendant disciple, from whom the sage Bharata got it. But his real dance is the cosmic dance that starts the course of involution or disintegration of the universe at *mahāpralaya*. He gave an exhibition of *ānanda-tāṇḍava* at the earnest prayer of the *ṛishis* Patañjali and Vyāghrapada. The four-faced Brahmā kept time to the dance; Mahāvishṇu played on the *mṛidaṅga*; Tumburu and Nārada sang in accompaniment. Pāṇini, the great grammarian, has it that out of the sounds produced from the drum in the hands of Śiva, evolved the fourteen grammatical *sūtras*, aptly named the Māheśvara *sūtras*.

The *nṛitta* variety is dancing pure and simple, unaccompanied by gesture or language. This may, in a great measure, resemble the society dances and ballets in the West. *Lāsya* is more appropriate to the fair sex and is rightly attributed to Pārvatī. *Nṛitya*, gesticulation (expression) pure and simple, without language, is so careful and so perfect as to

[1] His *Ratnākara* has been commented upon by Kallinātha, known as Abhinava-Bharatāchārya. He was an adept in all the three sections of music.

enable the audience to understand and follow the unspoken thoughts and conceptions of the actor. This has attained remarkable development in the public musical performances of Malabar, named *kathākaḷi* and *sakkiār kutu*, as also in the more scientific and systematic expression-dance in the other parts of South India, named *Bhārata nāṭya* or *nartana*. *Nāṭya* is dramatic representation proper, where song, dance, expression, speech and scenery are combined.

REFERENCES OF DANCE IN SANSKRIT LITERATURE

Dance has found copious mention in Sanskrit literature from the earliest times. Of the amusements current among the people, the *Ṛg-Veda* mentions the performances of women dancers with broidered garments and low cut dress (I. 92.4). Also, 'Robed in garments, fair as heaven to look on,' they display themselves actively (VI. 29. 3). We hear also of men dancers who, with breasts adorned with gold, performed war-dances. References to song and dance are found very often in the *Rāmāyaṇa* also. Ayodhyā was always bright with musicians and dancers of the highest quality. Music and dance lulled the kings to sleep and woke them again to the duties of a new day. Even in the kingdom of Vāli, the so-called king of the monkeys, we hear of music and dance in the apartments of the royal ladies. But the palace of Rāvaṇa affords us the best record of the advance and progress made in the arts of music and dance in those far-off days. One of the women won the heart of Rāvaṇa by her matchless powers of expression and dance. Even when sleep overcame her, her limbs retained the pose they had assumed during the entertainment.

The *Mahābhārata* mentions Arjuna, the mightiest of the Pāṇḍavas, as a master musician; so much so that during the year of exile *incognito* in the court of King Virāṭa, he offered himself as a teacher of music and dance. His wife Subhadrā too was a good artist. In fact music and dance seem to have formed part of a lady's education in the old days.

In Kālidāsa we get a glimpse of the art of dancing as practised in India about two thousand years ago.[1] Dancing saloons, specially constructed for the purpose, seem to have formed an integral part of the royal palace. Teachers and professors of the art find favour and engagement with royalties. Here is a fine definition and appreciation of *nāṭya*, taken from *Mālavikāgnimitra*:

[1] In Buddhist times dance and expression were quite common. The fact that Buddhist monks were specially prohibited from attending them is significant.

"The sages of yore regarded this as dearest to the hearts of the gods—the most acceptable offering to them. It derives its source from Śiva himself, who, in his dual aspect of Śiva and Pārvatī, gave to the world two varieties of it—the *uddhata*, stately and masculine, and *lāsya*, soft and seductive, suited to the fair sex. It holds a mirror up to nature and life in all its phases—peaceful, passionate and dark. It is the highest exponent of the varying emotions and feelings. It is the one and only means of pleasing through the eye and the ear people of diverse tastes and dispositions."

The following is a pen-picture of the ideal dancer: "Her eyes are large and lustrous; her face makes the autumn pale with envy; her arms slope away gracefully from her shoulders; her toes are finely moulded and prominent; she is in short the brightest creation of a divine Artist, in the golden hours of his imagination.

"Her motions are free and flowing; her hands and feet keep time most accurately; her action is light, easy and natural; she expresses the unspoken workings of her heart through her limbs that seem to have the sentiments imprinted upon them, as it were. She loses herself in the character and its emotions. She represents them so skilfully as to deceive us into the conviction that she pours out her own heart and its workings. The beholders are, for the time, taken out of themselves and live and move and feel with her and follow her joys and griefs, her hopes and aspirations, her despair and darkness."

In the *Gita-govinda* we have a lyric which occupies the forefront of Sanskrit literature in point of diction, style, quality, originality, imagination and suggestiveness. It is at the same time the most complete and authoritative of the classics on dramatic theory. In marked contrast with earlier specimens of musical composition, here we have definite instructions given as to the rendering of the twenty-four songs or *Ashṭapadīs*, that go to make up the collection. But as in the case of many a gem of Hindu science and art, time has played havoc with it.

DANCE IN TAMIL LITERATURE

The *Śilappadikāram* of the royal hermit Ilaṅkovādikal contains the most detailed and most important information on the music of nineteen hundred years ago in the land of the Tamils. The heroine of the poem, Mādhavī, the courtesan, undergoes a course of training in song, dance and *vīṇā*, under the ablest masters of the day. The teacher, the pupil and the instruments find systematic and scientific treatment.

Notable contributions to the domain of music have been made by Śrī Āṇḍāl or Godā, who, like Mīrā Bāī of the North, leads us through her poetry into lofty realms of love, human and divine. The enunciation of the grandest of truths is all the more valuable as coming from one of the fair sex. In the Sacred Collection known as the *Divya Prabandha* the compositions of Āṇḍāl are placed second in order, next to those of Periyāḷvār. They are two in number. The *Tiruppāvai* is a short piece of thirty stanzas addressed to Śrī Kṛishṇa. Every one of these thirty verses is a text of a very high order for song, dance and expression on the one hand, and for instruction, exposition and initiation on the other. In fact, they are the highest and the very best specimens of *nāṭya-lakshya* (the science of drama) in that they place before us the genuine *strī-viraha*, the passionate heart of woman surcharged with love.

CONCLUSION

Nāṭya is a subject in which men have specialized as much as, if not more than, women, both as a science and as an art. *Bhāgavatārs* of the old school used to sing the *Ashṭapadis* during their morning rounds for alms in the streets. At the end of each couplet, the accompanists were given a chance to play a duet, as it were, on their *jālars*. It was practically a choice collection of group sounds or *śabdas* that were used in the *nāṭya* when the same matter was danced to. It was a feeble representative of the old style, when the couplets were sung, danced to and expressed by one and the same artist, while the accompanists repeated the sounds that closely followed the movements of the feet.

In the case of the *Taraṅga*, I was privileged to witness an exhibition given during a *bhajana* party by a reverend old gentleman in his eighties. It was a wonderful sight to see the old man turned into an active and agile young dancer of twenty-five, and in addition he spoke the *śabdas* too as he danced.

Now all this has become past history even within our own generation. Social forces beyond our control have reduced the art of *nāṭya* and its exponents to a state of obscuration, if not of death. The welcome revival now gaining force in the West and its reverberating echoes in India fill us with the hope that dance, song and expression may once again be rescued from degradation and decay and grow to greater heights, drawing sustenance from the old and the new, the East and the West.

MUSIC: AESTHETIC VERSUS SPIRITUAL

In modern times art is tending to usurp the sceptre of the spirit: often enough it claims the homage that is due only to the Divine. The result is that the spiritual aspect of art comes to be ignored if not held altogether out of court. The presumption is fast gaining ground that the aesthetic appeal of an art should be encouraged at the expense of the spiritual. The object of this article is to oppose this ideology. My thesis is that it is only the spiritual element in an art—its element of psychic aspiration—that entitles it to our profoundest homage and that its mere aesthetic glamour would make it at best a plaything to divert for a while: at worst, a force of reaction and degeneration.

It must not, however, be inferred from this that I deprecate the aesthetic pleasure as such. All art, it is obvious, must have an aesthetic side to it even as all terrestrial souls must have a body and organs for sense-perception. To be precise, we demur not to aestheticism, but to the pretensions of aestheticism. For aestheticism is innocuous so long as it does not overpass its own jurisdiction. It is to be deprecated only when it becomes a dictator to the spirit instead of being its standard-bearer. And nowhere is such a tendency more deplorable than in the realm of the musical art. For music is perhaps the most predominantly spiritual of all arts, being—at its best—the most ethereal vehicle of the deepest emotion: the psychic.

This is not to say that the aesthetic aspect of music should be left out in the cold. The technique of an art must, unquestionably, be as perfect as possible. For behind the conscious mental impulse to perfection, is there not always an unconscious psychic impulse to contact God, the Archetype of Perfection? Was that not the reason why Christ exhorted the fishermen of Galilee to be perfect as their Father in Heaven was perfect? The poet too has said appositely:

> "Who seeks perfection in the art
> Of driving well an ass and cart,
> Or painting mountains in a mist,
> Seeks God, although an atheist."

True, the poet—being a poet—somewhat overstates his case. For true spiritual outlook must, perforce, be a conscious outlook. Yet he is not altogether mistaken when he suggests that all desire for technical

perfection is a reflection of the soul's aspiration after perfection in action down to its minutest details. Thus the aesthetic appeal of an art is all right so far as it goes. Only it does not go far enough, getting stuck in the mid-world: the world of formal beauty. This mid-region is to-day loudly proclaimed by the aesthetes as the Olympus. That is why it is time this false view was combated, namely, that the aesthetic aspect of music is even more important than its spiritual aspect. The aesthetes, be it remembered, idolize formal perfection for its own sake and hold that this is the loftiest ideal for a creative soul. But this is not true, since formal perfection cannot, evidently, be an end in itself. Form itself would have little meaning if the spirit did not seek to reveal itself through its medium.

The idolaters of beauty, the aesthetes, make therefore a fundamental mistake in assuming that beauty is exhausted by its appeals to the outer senses. For all thinkers know that many a meretricious dazzle which appeals at once pales or palls in no time. The cheap outer glitter does not invest a base metal with the status of gold: there is a substance in gold which is lacking in the baser metal. Mere technical perfection and formal beauty of a work of art is comparable to this superficial glitter of metals.

" Just as technique is not all, so even Beauty is not all in Art. Art is not merely technique or form of Beauty, not only the discovery or the expression of Beauty—it is a self-expression of Consciousness under conditions of aesthetic vision and a perfect execution. Or to put it otherwise, there are not only aesthetic values, but life values, mind values, soul values that enter into Art." Therefore it has been said, " Art is for the soul's sake, the spirit's sake, and the expression of all that the soul, the spirit wants to seize through the medium of Beauty."[1]

In days gone by this might have been a truism, but now it needs to be restated. For the " life values and mind values " of music hold now the centre of the stage, with the result that music is coming to be regarded purely as an aesthetic activity which serves the desires of the mind and life to the exclusion of the aspiration of the psyche. This is a wrong outlook, since no true soul-elevation is attainable through a mere promotion of the aesthetic view of music. Mere aestheticism shows, in effect, recalcitrance to light of the spirit. That is why in art we have come nowadays to prize the exhibitionism of spurious novelties more than the outflowering of eternal verities. This topsyturvydom of values

[1] Sri Aurobindo's essay on " Art for Art's Sake."

is becoming daily more and more glaring. No wonder the youth of to-day is becoming more and more cynical, as Russell wails in his latest book, being baulked—without even their knowing it—of the psychic realization in art, poetry, music, love. We are too near the danger-zone of a wise folly which reaches out for the parochialism of vital pleasure in art at the expense of the empire of psychic bliss. We are forgetting that music, however splendid in technical perfection, would fail in its supreme mission if its goal were mere sensuous pleasure. Because merely skilful music, however technically perfect, could never satisfy the soul unless it derived from the soul. In other words, spiritual music can never aspire to an audience which has no conception of the spiritual appeal of music, any more than philosophy can aim at relieving the bored epicureans who have no idea of what true philosophy can give. To put it differently, if music is to contribute to the richness of our spiritual life, it must be cultivated not as an aesthetic exercise, but as a progressive expression of the spirit through the medium of the senses. For only then can it grant us a vision of the eternal through the temporal:

"Moment mere, yet with all eternity packed, lone, fixed, intense,
Out of the ring of these hours that dance and die, caught by the spirit in sense,
In the greatness of a man, in music's outspread wings, in a touch, in a smile, in a sound,
Something that waits, Something that wanders and settles not, a Nothing that was all and is found."[1]

What do I mean by an audience which has no idea of the spiritual conception of music, and which as such serves as a gravitational down-pull? An instance will illustrate it best.

Let us take the case of the gramophone or the radio. It is patent to all that there is a large demand for music through such mechanical inventions as the radio and the gramophone which, it is claimed, have democratized music. Unquestionably they have. For who on earth can possibly deny that there is no escaping the ubiquitous tentacles of these two demons? One can to-day hardly move two steps but one is thundered at by the metallic clang of such mechanical music, *aesthetic* to its finger-tips! One hears a deal about music being now brought to the door of the masses, thanks to such agencies. And none can deny this either. But the question remains: is it true music which is worth while that is thus disseminated among all, or is it but an

[1] The poem "*In Horis a Eternum*" of Sri Aurobindo, from *Six Poems*.

apology for the same? The soul which wants a vista of the infinite, sighs and asks if it gets a vision of the psyche through the highly finished commercially satisfactory commodity passing for music, and wonders if it is but a myth that music was intended as an intermediary, a mediator, between the servant of music and the Lord of sound. We, acclimatized to such music labelled "aesthetic," have all but forgotten that there was a time when music as a *sādhanā* (*gānāt parataraṁ nāsti*: "there is nothing more helpful to the spirit than music") was a living tradition lived by the best of *sādhakas*, as exemplified, for instance, by the story of Tānsen and his *guru* Haridās Svāmī.

Emperor Akbar expressed one day a desire to hear the latter. "He cannot be made to come to you, Emperor, for the reward of your whole empire," said Tānsen. So the mountain had to go to Mahomet. Haridās Svāmī sang in ecstasy, hardly noticing the august ruler of Hindustan. Akbar was stirred to his depths as he had never before been, and actually shed tears. On his return to his palace he said to Tānsen: "How is it, Tānsen, that when *you* sing the very same songs they are not a patch on *his* execution? Do I take it then that he has not taught you his art perfectly?" "It isn't a question of art at all, Emperor, it is a question of offering," replied Tānsen. "What do you mean," asked the Emperor, "question of offering?" "Yes, Emperor," explained Tānsen, "you see, the *guru* has the advantage of singing for the Lord of the universe, whereas the disciple sings for the Emperor of India."

This brings out in a nut-shell the world of difference between the two points of view: aesthetic *versus* spiritual. It implies that however clever and discerning the human connoisseur, he can never give the spiritual inspiration, unless of course his consciousness was transfigured by identification with the Divine. A human audience can therefore never be *desired* by the true spiritual musician whose one preoccupation must be to offer his art completely to the Divine. In other words, the true spiritual singer must sing *à la* Haridās Svāmī, offering his music to the Divine and no other. Only then can his music be truly spiritual. If he sings *à la* Tānsen for human beings, his music remains fundamentally on the aesthetic level: I mean, when he *offers* his art to the humans, no matter if they were as great patron-connoisseurs as Akbar was. However humble a musician, he must never sing to please others; he can cater for the human appraisers and music-lovers only at his own

peril, as he cannot then help vitiating his art and consciousness more or less.

In modern times, however, democratic music has become and is steadily becoming so cheap and flimsy (gramophone, talkie and radio music is but a result of and index to this degeneration of our outlook on music) that it caters not for connoisseurs and music-lovers, but mostly for those who care very little for music save as an adjunct to fashions and fallals, as a concomitant to a Godless life chasing after the glamour of superficies. In his celebrated book *What is Art?* Tolstoy has criticized scathingly the Herculean efforts of the organizers of cheap plays and musical comedies in the West. To attend a rehearsal of these silly enterprises is really to believe in the myth of the mountain being in labour to produce a mouse. " The pity of it, Iago, the pity of it! " sighs the soul after Shakespeare, to witness the heights of folly men will rise to for the glitter of lucre plus the glow of notoriety! For what else could be the point of it all?—one naturally, inevitably, asks oneself. To distract a few tired citizens for a brief interlude with some cheap " creation-saving " devices, to quote Aldous Huxley! If so, the result? Is that desirable either, in any way? Far from it. For these musical amusements incapacitate people progressively for responding to joys that are worth while, since it is a well-known psychological experience that you cannot continue to taste lower pleasures without detriment to your aspiration for the higher. And the musical organizers of to-day know this very well. That is why they cater as they do, labelling their handiwork " artistic." Pascal did not sigh for nothing that the saddest phenomenon of modern times was not the spectacle of the sorrows of human beings, but the spectacle of their pleasures. In nothing is this more incontrovertible than in the domain of the so-called artistic music which panders mostly to the lower nature of man, thereby gradually atrophying the higher, that is, the capacity for responding to the spiritual appeal of music. It may be argued that this is not the fault of the artistry of music, but that of human nature itself. True; but when the lower tendencies of human nature are exploited in the name of art, which misleads millions, then? When celebrated aesthetes, like T. S. Eliot for example, plump unashamed for art for the sake of its veneer of " amusement " (see his definition of art in *Sacred Wood*, that it is little more than a " superior amusement to distract the gentlefolk "), can one possibly acquit art, the aesthetic art even?

No; the so-called aesthetic outlook on art cannot wash its hands of the evils it brings in its train, since its avowed gospel is that of ephemeral pleasure which warps the nature irrevocably; since whatever exploits the easily excitable lower part of our nature must be held suspect. It may indeed be argued that this is an overstatement, that all aesthetic art does not aim at this, that when it knows its limits it does not do active harm. This is true. But the trouble is that once you are committed to hedonism as the gospel of life, reckoning pleasure as an end in itself, your art cannot be trusted to know its limits. For instance, it is well known that cheap catchy music, rag-time music, melodramatic music afford pleasure to most people who are not musically cultivated. One has to outgrow such pleasure often enough by foregoing it, by turning to the great masters who cannot please the unmusical in the beginning. But if one were not taught and exhorted to do this, if one's taste for cheaper stunts were to be defended on the ground that it gave solid pleasure, what then? And this is not a mere supposition, as any one who looks at the modern world of art dispassionately must concede. In art such a cult of spurious pleasure is especially disastrous as art's is after all a world of ideals, certainly a higher world than the worka-day one. Therefore when there develops a tendency in the art-world to betrayal of the idea, one cannot remain silent—particularly when one sees it whetting often enough the unlovely appetites in man, when one sees it actually nurturing all that is jumpy and boisterous and reactionary, for example, in modern music of the radio and talkies and gramophone the world over. Music is particularly inclining to cheapness everywhere. Inevitably, for you cannot worship God and Mammon with the same oblations. Aestheticians have even started defending cheap vital music on another ground: that it gives a tone to the system! At that rate, even drugs and alcohol will have to be adjudged equally desirable! To stimulate is harmful when it is achieved at the cost of all that is delicate and precious in our nature, as is being often done to-day in the name of art, bringing frequently serious nervous and vital reactions, as I know from personal experience of the exciting music of the West (for example, the discordant cacophony of Schonbergs, much of the ballet orchestra, revue dance-tunes, cabaret rag-time, etc.). It could not be otherwise. Art with a distorted outlook cannot but grievously impair our nature, as it works on its deeper strata, and that often through the subtly irresistible methods of symbolic suggestions. That is one of the main reasons why the artistic and popular music of to-day has so often been

the handmaid of sentimentality, chauvinism, jingoism and what not, feeding always the latent barbarism in man. And thanks to the rationalization of aestheticians, this insidious exploitation of the easily exploitable parts of our nature is not even recognized for what it is as against what it pretends to be. The thrill comes and it is unquestioningly taken at its face-value and hailed as desirable, since pleasure is the desideratum.

I have here dilated at some length on such tendencies in the West as they obtain more conspicuously there than anywhere else. But it must not be supposed on that account that such tendencies do not at all prevail in our country. This degeneration of music is a world-wide movement and no area can altogether avoid its infection. Who that has ears and eyes can deny such vulgarization in our talkie music, operatic music, drawing-room music, etc.? We are fallen on evil days indeed getting divorced more and more from our spiritual outlook on music. That is why of late the conviction has been growing on the sober section of thinkers everywhere that salvation of music is to be sought not so much in the direction of its art-value, finish-value, attractiveness-value (though technical perfection is extremely necessary—but only because one must offer one's very best to the Divine) as in the direction of its inspiration-value, profundity-value, consciousness-value, which can be gauged only by the spiritual outlook on music as against the artistic. Spiritual help, these thinkers are realizing, can indeed be legitimately expected from music that is worth the name. Only, such help cannot be had for the asking: it has to be aspired for through a *sādhanā*. When we approach music in the right way, it can, doubtless, help us make an opening in our consciousness to the Divine through an emotional offering of our psyche to Him: it can often act as a sort of ladder of ascension for our spiritual being. But when this very music is cultivated only as an art, it produces a world of harm, and that precisely because music is not a wanton's bauble to play with: it is a far more consequential thing—a need of the soul. We being impure in our composition, any gospel of pleasure for pleasure's sake cannot but bring down on us the most deleterious consequences and reactions. The chief of these is that it keeps our consciousness immured within the four corners of those enervating pleasures—to say nothing of the distortion and much more serious warping of nature that may follow in the wake of such a hunt after the quarry of pleasure alone. For pleasure is not all-sufficing, any more than it is self-vindicated. There is, for instance, an unquestioned

pleasure for the bulk of mankind in hooliganism, in sabotage, in class-hatred, in homicidal patriotism that pounces with bayonets on the enemy to the sound of glorious drums and pealing of national anthems invoking a partisan God; there is the stimulation of the senses towards voluptuousness which is all the more disastrous, because it is done covertly under the guise of art; there is the fostering of values like personal ambition, which catchy popular musical compositions so effectively buttress; and last, though not least, there is the danger of being caught in the malignant traps of those unseen forces—"*choses absentes*," to quote Paul Valerie—which are but too ready to use us as puppets with such sugar-coated poison-baits, hoodwinking us all the time with the delusion that they are giving us only the quintessential kernel of pure art. One can steer clear of such ditches and pitfalls first by recognizing the false outlook on music—the artistic; secondly, by experimenting constantly with it in the spiritual direction; thirdly, by rejecting those vibrations that bring in vital and nervous upsettings; and lastly, by picking out and cherishing those that bring lasting joy unaccompanied by vital reactions. No quest of Truth in life but its path is strewn with thorns.

No doubt the question how such a spiritual outlook on music should be made concrete in our life can be satisfactorily answered only by those who have been divinized by God-realization: that is, by those who radiate wisdom's light from their Truth-goal already attained. But still we may perhaps safely posit that one such way is to take to music not for its own sake, nor even for that of community, society or humanity, but solely for the sake of the Divine: that is to say, with the ever-deepening consciousness of dedicating it all to the Divine who accepts it like everything else. And doubtless this presupposes that one must cease to sing either to beguile the connoisseurs or to please the voluptuaries, as one must concentrate only on the Divine as the gracious recipient of our offerings. It must always be remembered that as soon as any other motive comes to the fore, it throws its shadow on the consciousness, and the devotee in us wilts, thanks to our exploiting art, for ends which are not compatible with those of the spirit.

It is no doubt difficult to live in the world of the so-called strident democratic art, committed to the aesthetic outlook on life, and yet stand for the spiritual motive in music: a thankless task, besides, to swim against the tides of cheap humanism. It is not easy either to disclaim the pseudo-altruism of the artist who fondly believes he can liberate others

without first achieving inner freedom himself. Yet the salvation of art lies that way and in no other.

I am fully aware that here I may be met by the argument that since music so palpably moves others, it cannot have been designed by the Divine as a private art to be cultivated in the seclusion of an individual sanctuary. But as Sri Ramakrishna used to repeat tirelessly: "One must have the warrant (*chāprās*) first before one runs to execute the behests of the Divine; altruism achieves little till one has received the authentic seal from the Supreme Healer to heal the afflicted." He used to say again and again that one must first reach the Divine before one could be of genuine and lasting service to His creatures. History has testified to the truth of his dictum times out of number: if the *sādhanā* is genuine, others cannot but benefit therefrom; but if it is not, no altruism or aestheticism can avail. Sri Ramakrishna's own life of supreme self-dedication to the Divine Mother is one more proof, if proof were still needed, of the truth of the profound paradox that only when we forget the universe for the Self do we reach truly the Self of the Universal. Popular humanitarianism (without any spiritual discipline) and aestheticism (without spiritual inspiration) fail to apprehend this mystery. They cannot see, thanks to their myopia that "since our divine perfection embraces the realization of ourselves in being, in life and in love through others as well as through ourselves, the extension of our liberty and its result in others would be the inevitable outcome as well as the broadest utility of our liberation and perfection."[1]

This is self-evident. If you achieve the Source of inspiration, how can you fail to inspire? The same with regard to music. Music, if it is to be truly spiritual, truly inspired, must be self-oblivious—liberated from the prison of the ego—and this can happen only when the artist lover loses himself in the adoration of his Beloved, the Helicon of all spiritual art. In the mysterious unity of life one gains all only when one loses all: one radiates light only when one has achieved the summit and fount of Light. That is why the most soulful music of India has been created and broadcast by spiritual men and women: Mīrābāī, Kavīr, Tulsīdās, Rāmprasād, Kamalākānta, Tyāgarāja (the Tamil *yogin*), the Vaishṇava *sādhaka* poets, Śrī Chaitanya, Sri Ramakrishna, Vivekananda, hundreds of mystic composers (*āuls, bāuls* and *bhajan*-singers), thousands of *kīrtaniyās* and others became unfailing sources of inspiration to tens of thousands, because they sang primarily to their

[1] Sri Aurobindo's *Synthesis of Yoga*.

Beloved, the Supreme Lover, in a spirit of self-offering, and not to the public in the modern spirit of aestheticism using art as a contrivance to afford sensuous pleasure. So did the beautiful Mira, the Princess mendicant, sing:

> " Make me Thy servant, Thine !
> For Thee I'll make a garden fair and bright
> Where every morning Thou wilt crown my sight.
> In all Vṛindāvan's groves with greenness gay,
> My songs of Thee will ring all night and day."

So also did Kavīr make an offering of his soul to Rāma, the Divine:

> " Whose heart is Rāma's dear abode,
> What matters if he at all pray or fast or nay?
> Whose refuge is the *guru's* feet,
> What matters if the pilgrim's way be his or nay?
> Whose soul is moved with love for all,
> What matters if he give away his wealth or nay?"

In the same ecstatic way of self-forgetfulness did the great God-lover Sri Ramakrishna sing:

> " Dive deep, my mind, into the ocean of beauty.
> Search, and thou wilt find the treasure of Love."

And the lion-hearted Vivekananda:

> " To Thee I've joined my heart,
> Whate'er there is, is Thou."

Śrī Chaitanya, the prince of devotees, lavished Divine Love in the same way through his self-obliterating devotional *kirtana*—one of the most magnificent spiritual creations in the domain of music. In India there has been, from time immemorial, the tradition of *nādasādhanā*, whose basic principle is the direct invocation of the Divine through one-pointed concentration on musical notes, which they say opens the windows of the soul through the onslaught of musical vibrations. Though we have all but lost the key to this form of intense *sādhanā* through musical scales and melodies, yet the tradition is, happily, still living. That is why we still see so many spiritual men and women taking to music as a discipline.

Obviously, aestheticism can have no conception of such a mission of music, its cult being, as I have said, a hedonism in art, which culminates—as it logically must—in a Godless narcissism of butterfly beauty. I was lately reading a modern book on this aesthetic cult by the well-known French aesthete, Charles Moran, who is the partisan of the late Roger Fry of England. The futility of his verbose championship of the

doctrine of pleasure would be irksome if it were not pathetic. He has started, for instance, with denying that " there exists a universal beauty," and ended in a wordy nebula. He is almost lost in bewilderment about the place of aesthetics as a guide to what constitutes the soul of an art. " Therefore," he most wisely enlightens us, " so long as there are art-lovers on earth, they will find in their inexplicable peculiarities motives of dispute." He then laments, in effect, that there is no law worth the name in scientific (?) aesthetics; there are only individual predispositions and preferences. Lastly, he trails off with a doleful simile to illustrate his discomfiture: " Thus, when the leaves are falling from a tree, each may say to its neighbour: 'The physicists can think what they please, but I don't fall as you do.' Which, we know, easily becomes: 'I fall better than you.' " Time was (alas, youth is an emotional chronicle of broken dreams and disenchantments) when, in Europe, I drank at the wisdom-fount of the doctrinaire aestheticians, thinking that they knew what they were talking about. That is why I had turned in those enthusiastic days of mine to the gospel of aesthetics in music: the gospel, that is, of Godless beauty. That is why I did not see that such beauty (if beauty it is) in music and the arts was, oftener than not, far more stultifying and cramping than drugs, as it acted on our consciousness surreptitiously—eventually making us unable to perceive even this simple fact that no art was truly worth while unless it made us identify formal beauty with the Divine as the recipient of our worship and adoration. Art truly fulfils itself only when it consecrates its technique to the Divine, the artist seeking new birth as a devotee.

It would perhaps not be quite out of place to end on a note of personal experience—if only as an instance in point:

I was then at Benares, singing away—for all I was worth—in meetings, parties, assemblies and mostly in aesthetic soirées, fully persuaded that I was fulfilling my *mission* of the artist minstrel. But to my surprise and sorrow I discovered that this self-chosen missionarism did not elevate me in the last resort: it more and more depressed me! After every such extravagance of my energy I found myself more and more in the grip of a heart-searching sadness and kept asking myself what was the point of such musical idealism which brought in its wake only a sense of futility of it all? Was I born for this? Was my art-impulse given me so that I might fritter away my precious life-energy to divert a few clusters of men suffering from the dead-weight of boredom here and there? And so on.

Just then I chanced upon a fine singer of devotional songs: a *kirtana*-singer. I liked to learn a few from him. When, however, I invited him to sing one day at a fashionable drawing-room party to be lionized by the *élite* of Benares, he declined: he sang only on occasions of the worship of Śrī Kṛishṇa—offering his songs to Him; he was a Vaishṇava and took his music as a *sādhanā*, not as an art. Then I heard him on one such occasion at a friend's house: it was the *janmāshṭamī*—the birth-anniversary of Śrī Kṛishṇa. He sang in an ecstasy of adoration, with an uplifted face playing on the drum (*khol*) accompaniment himself, wholly oblivious of his audience. There was no applause, no orders, no hurry among the people to clap and go away to do something truly masculine and serious. But when he finished after three hours the whole audience was in tears! It was an unforgettable experience for me and a crushing one: it brought home to me what my own self-complacent aesthetic music was worth compared with his. It was truly a day of revelation in my life: I realized for the first time what music could do if it was looked upon not as an art, but as a *sādhanā*.

INDIAN CULTURE AND MUSIC

It is the purpose of this article to find out the main threads of our music during the period which is said to have witnessed a cultural upheaval, throughout the length and breadth of our country. The point of view here adopted is sociological. Any criticism of the development of novel forms is incidental to the main theme, viz. that the revival of our interest in music is closely related to the recent changes in our social structure.

Up till the eighties of the nineteenth century, Hindusthani music led a sheltered existence in the courts of our princes. From hearsay evidence one could conclude that our noblemen cared for music and tolerated its higher manifestations and that some experts belonging to well-known gifted families carried on their traditions with zeal and ability. In spite of the local and stylistic differences, a certain norm could be discovered to which the experts sought to conform. The bewildering variety of interpretations of *rāgas* and *rāgiṇis* never demolished their structural unity. It also gave room for a certain, though limited, freedom to the artists. Instances could be given to show that in the first three quarters of the nineteenth century, certain new decorations were added and the quality of notes changed. That period did not yield the same abundant harvest of works on the theory of music as the sixteenth or the seventeenth century. Yet valuable compendiums were collected in the North, at Patna, Calcutta and Lucknow. The theory of music was not much advanced, but interest in it was kept up. The only explanation that can be offered for this unity in the midst of diversity is that the Indians still believed in the unity as well as in the continuity of Indian culture and were not conscious of the coming changes in their society. This lack of consciousness was responsible for the next phase in the history of Hindusthani music, when orthodoxy flourished with a vengeance. The *ustāds* (masters) became rigid disciplinarians, as any other group would become in an atmosphere closed to the winds of change.

The South was more happily placed than the North. No one reason could be advanced for its more favourable situation. In Madras Presidency, the continuity of the Hindu traditions has remained unbroken for a comparatively long period in spite of a number of Muslim principal-

ities. What was done to Hindusthani music by the Muslims from the fourteenth to the eighteenth century was left undone in the Karnatic. The old tradition was probably left to repair and renew itself. It was done by the genius of Tyāgarāja. In the Mahārāshṭra country, there was no such valuable tradition, and consequently no opposition to the introduction of the Hindusthani style of the Gwalior school. The spreading prestige of the Gwalior school in the North as well as in the Mahārāshṭra is a very interesting study. From Raja Man Thanwar to Haddu Khan and his brothers it has been a long procession of conquests. Madras alone resisted it, and Bengal found its gymnastics rather trying. Mahārāshṭra musicians occupy the front rank among Hindu vocalists of to-day, and they were initiated into the mysteries of the Gwalior school of *kheyāl* only about three generations ago. Before that Mahārāshṭra belonged musically to Madras.

Yet from another point of view, this persistence of traditions in the South has been somewhat unfortunate. Barring Tyāgarāja and one or two others, the sum total of the Southern contribution to recent music has been an emphasis on formal purity and the musical value of notes in practice and theory alike. The opposition to the evolution of new forms and the stress on conformity imposed by the greater strength of traditions in the Karnatic music have led to a certain mechanical repetitiveness in execution and a lower premium on individual creativeness.

Let me not be misunderstood. The peculiarity of classical music everywhere in India, but in the South more than in the North, as compared with that of the music of recent years, has been an attempt to preserve the purely musical values against non-musical encroachments. This has been to the good of music. Yet, in the present position of Indian culture, creativeness is probably more important than preservation, even when it seeks support from non-musical values. Purely musical creativeness is the ideal, but literary music, when it is truly creative, is also welcome in a period of national upheaval, for it is nothing less than a symptom of an all-round release of the spirit.

In the context of a cultural renaissance one may hazard the statement that the South would much rather indulge in sophistications than allow its music any latitude to replenish itself by drawing its sap either from folk-music or from literature. Bengal has chosen the latter path, probably because of her lack of a strong tradition; but in that selection she has been considerably supported by a host of literary artists, who are

also no mean musicians. In other words, the South has been less adaptable to the impending changes in our culture than the North.

The eighties have been a turning point in our history. The princes gave place to the zemindars and merchant-princes. The zemindars started becoming absentee-landlords and lived in the cities, the seats of the Government. They still retained connection with their villages, but their heart was urban. The merchant-princes were becoming landlords and they felt it their duty to patronize musicians. Little courts were formed and the musicians poured into the cities from the decaying native States. There was hardly a musician of note who did not come in that period to the then Imperial city of Calcutta to try his fortune. After the death of Wajid Ali Shah, Maharajah Sir Saurindra Mohan Tagore began to collect musicians and stimulated the theoretical interest in music by writing books on it. He was a great patron and his name is still remembered by old musicians of Northern India. In this work he was helped by his fellow-zemindars. (Later on, the Saṅgīt Samāj was established with the help of the new *élite*). About this time the Jñānottejak Maṇḍalī was started in Bombay. Its purpose was more serious than entertainment pure and simple. The Saṅgīt Samāj is now a name, but the latter is responsible for at least three schools of music in Northern India and two dozen books besides. Pandit Vishnu Narayan Bhatkhande was a member of that Samāj and founded pedagogics on his lectures there. The relation of this interest in music to our culture rested on the fact that its protagonists were the upper middle class consisting of old but decrepit landlords, merchants, new zemindars and successful members of the liberal professions. Their faith in Indian culture was an induced one and partook of the reactionary character that always marks the first phase of nationalism. It could not be a pure one, generated as it was by the reaction against the foreign political domination. In other words, a disinterested knowledge of the past was not so much its drive as the will to discover our ancient glories. The birth of the Congress movement was contemporaneous with the revival of our music. The two brothers Kalka and Vindhya Din Maharaj started the Lucknow School of Dancing, which was destined to spread over Northern India. Its *mudrās* (poses) were taken from the classical modes, some novel ones were created and the whole was subordinated to the other school of Lucknow Fine Arts, viz. *Ṭhumrī*. About this period Tagore's genius burgeoned forth in all its glory. Songs and poems ringing with music came in a spate. At Patna, Gaya, Bhagalpur, and various other cities of note music clubs were

started by the gentry. There was a note of challenge in this voice at dawn. The West had insulted us; our upper class felt it their duty to retort that India had an undying culture of her own.

This retort would have ended in a hoarse voice had it not been reinforced by the whisper of the Sage of Dakshineswar. It is a fact that mystics have always appeared at times of our national crisis. They have been followed by their prophets. Sociologically speaking, Ramakrishna Deva's very existence proved that the current of our Indian culture was not dry; in fact, it was flowing even without any reinforcement from the Western stream. His teachings were synthetic, *in a special sense*. They were not eclectic, neither were they orthodox. They helped to create a certain spiritual attitude in which the different types of experiences codified in various religions could be given the measure of their respective worth. Similiarly with culture, in which he was not immediately interested, but the same attitude was certainly a source of power for our cultural life. The sociological implication of that attitude was significant. Here was a healthy corrective for the evils of a nationalistic bias. It was no longer going to be—India is all good with her spiritualism, and the West is all bad with its materialism.

Swami Vivekananda's indictment of the social maladies of India was as severe as his appreciation of the vigour of the West was genuine. Paramahamsa Deva's mysticism was not Indianism in any sense. It strengthened the cause of true creativeness. But for his insistence on that spiritual attitude in which all disciplines find their place and order, the cultural life of Bengal would have been poorer to-day by remaining confined to the duty of repetition. In other provinces, the challenge gradually settled down to research into our past. The defect of the spirit of historical research is that it eats away the sense of responsibility towards the present and the future. Collectively, it does not give a chance to initiative, nay, condemns it as a departure. On the other hand, it offers a standard of criticism to judge experiments by. Thus it was that a Bhatkhandeji, an Abraham or a Subrahmanya was an impossibility in Bengal, whereas a Tagore, a D. L. Roy, or an Atul Prasad, would have died early in Mahārāshṭra. The same reason explains the lack of proper musical criticism in Bengal and its uppishness in the South. To repeat, the synthetic spiritual attitude, which was the special feature of Paramahamsa Deva's discipline, created an atmosphere in which individuals could breathe freely, and create art forms boldly. Experiments were, so to speak, in the air. They could not be so unless the idea that

foreign and folk elements alike had their contributions to make through contact with the sophisticated elements, was considered more important than the idea that Indian culture was to be kept intact by a rigid adherence to its pristine forms. The experiment at Dakshineswar was thus a liberating spiritual agency for art.

The writer remembers what happened to music in the first decade of the twentieth century. It had suddenly ceased to be a part of the Indian's liberal education. Not that it ever was deliberately included in the curriculum of earlier periods to any extent. But in our time, ignorance, and disrespect for music seemed to have suddenly received an official validity. The profession had been compelled to allow some middle-class individuals, no doubt. But the worth of the culture was estimated by the social worth of its exponent. These gentlemen could not keep their respectability. But it was a minor point compared with the change in the general attitude. The attitude was that of a new stratum of the middle class that had been called into existence by the spread of education. It might be called the ' middle ' middle class consisting mainly of the degree-holders and officials. These worthies were great puritans and looked down upon music and other fine arts. The never-do-wells of their families took to them with zeal but without moral support. In music, the prodigal sons, always few in number, learnt *dhrupad* and *dhāmār*, under the great Radhika Prasad or Viswanath Rao, the famous *dhāmāri* and a good number of *pakhwājis* could be found among them in Bengal. The *tablā* had its home in the Eastern parts, where the zemindars still patronized musicians, Muslim and Hindu alike. *Kheyāliyās* were not available, and when they came from Upper India or the States, they could not command an audience as big as the *dhrupadiyās* could. In *sitār* and *sarod* the Muslim *ustād* ruled, as the Hindu did in *dhrupad* and particularly *dhāmār*, and Kakub Khan and Keramat Khan, the two brothers, in banjo and *sarod* respectively, and Emdad Khan and Enayet Khan, father and son, in *sitār* were great names in Bengal before the War. Nagen Babu, Durlabh Bhattacharya and Tarak Bose excelled in *pakhwāj*. Abani Ganguli, Bhupati Babu and Prasanna Banikya were masters in *tablā*. Each one of these *ustāds* had a number of disciples who in their turn vied with one another in the number of respectable youngmen they could count as their pupils. Before the War the graduates were few and far between. The stream of classical music was still running and the sinners alone could bathe in it, as their parents were puritans and worshipped worldly success,

and further wanted their sons to do the same. The Vishnupur school then had not the same popularity as it now enjoys.

In Mahārāshṭra and Madras music was not so strictly tabooed. *Viṇa* in Karnatak and *kheyāl* in Mahārāshṭra were considered as parts of a liberal education. In a tour in the South undertaken in 1914, the writer was treated with high class music by boys and girls of at least four middle-class families. In Bengal the middle-class families had shut their eyes and ears. Music in domestic circles was confined to the Brāhmos in Calcutta and Dacca. Miss Amala Dass and Mrs. Sarala Devi used to conduct choruses in political conferences, and both of them came from the well-to-do emancipated sections of the Brāhmo community. There was no music among Bengali Muslims, high or low.

The release was effected by a combination of three sets of factors. The sociological one was the creation of Sir Asutosh Mukerji. A number of graduates came out of the University much in excess of the supply of safe berths. The result was the beginning of the unemployment problem. The numerical increase compelled the graduates to look beyond Government jobs. The Bengali was at last removed from the rut and began to look out for himself. Education also ceased to be a monopoly of the privileged class. The exclusiveness of one group was demolished. With it went that particular attitude which was responsible for driving a wedge between liberal education as a knowledge of English literature and history and the illiberal and immoral dilettantism known as flirting with music and painting. The Bengali was thrown upon his own resources by Sir Asutosh Mukerji. The second factor was the genius of two composers, Tagore and D. L. Roy. Their songs had gone to the villages on the wings of nationalism. Political sentiment, and not musical quality, was responsible for the popularity of their chorus-songs. Tagore's other songs, chiefly his love poems, were also popular and so were D. L. Roy's comic ones. In the country-side, Rajani Kanta Sen's devotional and comic pieces probably enjoyed greater popularity. The structure of these compositions was as yet classical, though intonations and exigencies of individual and collective performances were responsible for many departures therefrom. Tagore was the first to evolve a new style by seeking affiliations with folk-music. D. L. Roy introduced many European melodies and beautifully adapted them to his poems. Later on, Atul Prasad Sen became a serious rival in popularity. The musical fascination of his compositions chiefly arose from his miraculous

blending of *ṭhumri* and *ghazl* with the well-known airs, classical and rural.

On these factors Dilip Kumar Roy worked. The middle-class parents were faced with the problem of high dowries for their girls, and the boys were shy of the exchanges in the marriage market as no jobs were forthcoming after marriage. These girls therefore needed training in music either as an additional qualification or as a compensation for the deficiency in their looks and patrimony. The unemployed youths had spare time at their disposal. The love songs of Tagore, D. L. Roy and A. P. Sen were there. Circumstances were propitious and Dilip Kumar utilized them to the best of his undoubted abilities. This handsome, educated young man inherited from his father, D. L. Roy, his love of music, and invested it to good account. His voice was enthralling. Who else had his qualifications for being a missionary of music? He stirred the middle class of India (so long as he belonged to India) more than anybody ever did in recent years. The net result was that music penetrated into the household of every Bengali gentleman. He completed the work of his predecessors in a double quick time. He may also be credited with acquainting Bengal with the proper Hindusthani style by reports of his musical tours.

His musical criticism, while severe towards the mannerisms and the gymnastics of virtuosi, was highly appreciative of their real merit, which, in his opinion, consisted, particularly in *kheyāl* and *ṭhumri*, in the enjoyment of ample freedom within the limited structure of the *rāga*. His musical contribution to Bengal lies in the twist that he gave to the classical forms in the direction of freedom. His insistence on singing *dhrupad* and *kheyāl* in Bengali words was also important, but here he was not original. His influence has not been beneficial from the point of view of pure music. Yet from no account of the recent cultural history of music can his influence be omitted. He was the supreme missionary of music, so long as he belonged to music.

Elsewhere no such juncture occurred. Tagore, D. L. Roy and A. P. Sen were not to be had either in Madras or in Mahārāshṭra. In U. P., Bihar, and the Punjab, the educated class remained deaf to music at home. Not that they were puritans, but they wanted to keep the domestic atmosphere undefiled. Dancing girls could be invited on festive occasions, but the ladies were not allowed to learn music. These gentlemen knew the musicians and hence they were indifferent to music. The

musicians in their turn kept a jealous guard over their trade secrets. Their race was thus disappearing by disuse.

In Mahārāshṭra, a very important thing had happened in the birth of Vishnu Narayan Bhatkhande in 1860, in a middle-class family. He graduated in law in 1887 and built up a good practice in the Bombay High Court within a few years. His wife and child died soon after, and he could leave the profession in 1910 to devote himself to his life's work. He had received a sound training in all varieties of classical music of the North, from Wazir Khan of Rampur, Raoji Boa Belvalkar, the *dhru-padiyā*, and Mohammad Ali, the *kheyāliyā* of Jaipur. He learnt *sitār* from Ballabh Dass, the disciple of the famous Jivanji Maharaj. The chaos in our music urged him to bring order. An all-India tour was undertaken to meet the dying race of *ustāds* and to collect the best pieces from them and manuscripts from old libraries. He learnt Bengali to read Krishnadhan Mukerji's treatise. Besides the organization of the Jñānottejak Maṇḍalī, regular instruction in music engaged his attention. It was on one such occasion that the late Maharaja of Scindia introduced himself to Panditji incognito. Later on an invitation was extended to him to organize a music school at Gwalior. It was accepted and the Madhoji School was started soon after under his inspiration. The teaching was done by his method, to which the *ustād* became gradually reconciled when its benefits were realized. The Madhoji School is now flourishing with about four hundred students on its rolls. The Maharaja of Baroda was also impressed by the genius of Panditji and called the first All-India Music Conference in 1916, in which a battle royal raged between Panditji and others of the opposite camp. The victory of Panditji was complete. Since then within his lifetime there were as many as six Conferences, in each of which he was the life and soul. In the fourth Conference, at Lucknow, a resolution was passed to start a college of music. The Marris College of Music was the result. In this work he was greatly assisted by the late Raja Nawab Ali, that eminent connoisseur of music and Panditji's admirer and disciple, and Rai Rajeshwar Bali, the then Minister of Education in the U. P. Government. The Baroda State Music School had been established earlier. To-day there are about a thousand pupils in these four institutions, all being trained in Bhatkhandeji's method.

Panditji was more than a missionary of Hindusthani music. There have been no scholars of music like him. The list of his books is as formidable as their quality is high. *Śrīmal-lakshya-saṅgīta* in Sanskrit,

Sangita-paddhati in four big volumes, the *Kramika* Series in five, and *Gita-mālikā* in twenty-two parts. *Lakshmaṇa-gita-saṁgraha*, in which he showed his great abilities as a composer, and *Abhinava-rāga-mañjari* are his major works. He edited all Pundarik Vitthal's treatises, Venkatamakhi's *Chaturdaṇḍi-prakāśikā*, Hriday Narayan's *Hṛidaya-kautuka* and *Hṛidaya-prakāśa*, Lochan's *Rāga-taraṅgiṇi* and Srinava's *Rāga-tattva-vibodha*. Commentaries on *Saṅgita-darpaṇa* and *Saṅgita-ratnākara* (Svarādhyāya chapter) were also published by him. As if they were not enough, he wrote three masterly surveys of the Music System of Northern India from the fifteenth to the eighteenth century. Panditji's contribution has been twofold, pedagogic and cultural. As a result of his first-hand collection of well-known compositions from the chief families of musicians, he discovered the formal melodic unities which he classified into twelve *ṭhāṭs*. This was a departure from the conventional types of six *rāgas* and thirty-six *rāgiṇis*. The new classification was much more scientific than the old one, first because it was prompted by empirical considerations, and further because it started from the *śuddha* scale of *Bilāwal*, in which all notes are *śuddha* (pure), and passed on to scales with one, two, three and four *vikṛita* (modified) notes. He also gave a rational explanation of the usual assignation of *rāgas* and *rāgiṇis* to fixed periods of day and night by splitting up the scale on the back of *madhyama* and showing the correspondence between the morning and evening *rāgas* on the basis of the lower and the upper half of the scale. Then again, he invented the system of notation by which the nuances could be learnt by the tyro. In the *Lakshya-saṅgita* he showed the essential features of the *rāga-rūpa* in easy and often in poetic verses for easy remembrance. All this served the interest of the student. Classical music was no longer a closed concern for the professional, and anybody with a smattering of Marathi or Hindi could by the help of the *Kramika* Series acquire a workable knowledge of all the important *rāgas*.

Culturally, therefore, the closed *élite* group of *ustāds* is broken. On the other hand the way has been paved for introducing Hindusthani music in schools and colleges. The middle class has been affected by this revival. Provincial Governments and Universities will no longer find it difficult to discover for themselves a system of musical instruction. The dying tradition has been resuscitated. A more respectable section of the people will take up music as a profession. Among the public, the taste in music has considerably improved, and it is likely to improve

still more in course of time. Panditji himself was much more than a revivalist, but culturally his influence has been and will mainly be in the direction of the revival of our traditions. Other Provinces, Bengal in particular, find his collections and his own compositions very handy. Young composers there are already setting words to his notations. Pandit Bhatkhandeji's contribution to our renaissance has been as important as that of anybody else we know and talk of, though it must be admitted that the flowering of the creative spirit has not been his immediate influence. He has worked at the base, viz. traditional discipline. His concern was the continuity of Indian culture, while, say, Tagore's has been its adventure.

In Madras we do not know of any such movement in music. The old clear-cut difference between high and low persists, the low represented by dramatic music. The devotional music has a higher status in Madras than elsewhere. In Madras, the renaissance is in dancing, thanks to the Malabar poet Vallathol. Madras has many regions within its boundaries, each of which has its heroes and its own idiosyncrasies. Thus Sangameswar Shastri reigned in Andhra, as Vina Sessana in Kannada, and say, Vina Dhannammal in Madras proper. Tanjore has a school of its own. Yet the differences are insignificant before the unities.

In the United Provinces, to-day, Shajahanpur, the home of the *sarod*, has ceased to radiate music. The court of Rampur, once the strongest sphere of influence of classical music under his late Highness is to-day only a repository of famous songs. The late Wazir Khan's son is now in Calcutta; Mustaq Ali is the only *kheyāliā* living there, but he has few pupils. Under the pressure of social forces suggested in this essay, Allahabad and Cawnpore have become musical cities. Before the University was compelled to take up music by the persuasiveness and the organizing ability of Prof. Bhattacharya, Pandit Vishnu Digambar's disciples had captured Allahabad. With the exception of Lucknow, these gentlemen, mostly Mahrattas, are to be credited with keeping the torch burning in almost all the important cities of Northern India, as far as Lahore where Pandit Vishnu Digambar first started his musical school. His Gandharva Vidyālaya had its headquarters at Bombay, but was otherwise peripatetic. It is a strange irony that Pandit Vishnu Digambar's popularity with the cultured public should rest upon his *bhajana* songs, whereas it should have been founded upon more solid grounds. He had sound training, a grand voice and dignified manners, and possessed wonderful dramatic qualities. Yet his sociological sig-

nificance is that of a catalytic agent. In the writer's opinion the Marris College of Hindusthani music is now the most potent force operating on behalf of classical musical instruction, for which India's thanks are again due to Pandit Bhatkhandeji whose best achievement, Sri Kissen Ratanjankar, is its Principal, and to Lucknow Taluqdars, a young representative of whom, Rai Umanath Bali, is its able Secretary. The U. P. Government gives it a generous grant.

To-day the whole of India has been touched by a number of major factors. Middle-class unemployment, the growth of vernacular literature, interest in folk-music, the gramophone and the radio, and above all, the movement for female education have combined to give a fillip to the spirits that had drooped after the period of political obsession had ended in nothing tangible and materially gainful. In Bengal one may trace the epidemic of music after the Non-co-operation Movement. But the sequence is not causal. In any case the new movement in music in Bengal is very interesting. A week's radio programme of the Calcutta station reveals two tendencies. Two days are usually set apart for classical music and two or three days for light and modern songs. The vocal classical music, except in very rare cases, is classical only in language. *Dhrupad* is very rare on the radio. *Dhāmār* is absent, not because of the unsuitability of the *pakhwāj* for the microphone, but because of the non-existence of the *dhāmāriyā* and of the apathy of the listener-in. *Kheyāl* is more popular, but of the lighter variety, in which fast *tāns* in quick rhythms have taken the place of the slow and dignified development of *bilambapad*. The structure of the *rāgas*, in some cases, differs from school to school. The accuracy of notes is seldom observed. Still the enthusiasm for *kheyāl* is unmistakable, and a very large number of young men and women are eager to learn its intricacies and appreciate its beauties. Sjs. Girija Chakravarty and Jnanendra Goswami are catering for this demand. Gopal Babu and Gopeswar Banerji are probably the only famous specialists in *dhrupad* now remaining in Bengal.

It is through the so-called ' modern songs ' that the Bengali youth prefers to show his regard for music. Tagore, D. L. Roy and Atul Prasad have been responsible for a host of young composers, chief among whom is Kazi Nazrul Islam. For the first time composers are divided from the songsters. In course of time when the difference between a poem and a song is realized, the compositions will be better.

In stringed instruments the same dichotomy is not observable. Bengal never took to *viṇa*. *Sarod* came in with Keramat Khan who left a

number of very efficient pupils. Hafiz Khan of Gwalior also had been living in Calcutta off and on. Amir Khan spent a number of years at Rajshahi. But the influence of the last two *sarodiyās* has been less than that of the first. Bengal has produced a great master of music in Allauddin Khan, but to her misfortune cannot retain him. He now lives at Maihar. In *sitār* Bengal has been particularly lucky in being able to claim Enayat Khan as her own. The son of a genius, Emdad Khan of Indore, he is now ruling Bengal. He is very generous as a teacher and a supreme artist. In India there is nobody like him either in the manipulation of the qualities and the special features of his instrument or in the artistry of his execution. His *rāgas* are always pure and his play is always original. Gopeswar Banerji's family also consists of many *sitāriyās*, but Enayat Khan is regnant to-day. Srijut Pramatha Banerji is an instrumentalist, but his pupils are vocalists. In *pakhwāj* and *tablā*, particularly in the former, Bengal is still classical in her taste. But with the decay of *dhrupad*, the tradition is withering. Nagen Babu and Bhagaban Sen are dead; only Sj. Durlabh Bhattacharya among first-rate artists is living. He has no equal in India. I have been told by people in the know that music in other provinces is faced with the same situation. Music has been cheapened, in the opinion of experts, by the drama, the radio, and the gramophone. Yet the younger generation holds that it has grown more socialized. In a word, minus the great composers and the spate of the poeticalities, Bengal is fairly typical of Madras, Gujarat and Mahārāshṭra. The growth of vernacular literature, being the major sign of provincial cultures, has been chiefly responsible for the mixed music of to-day.

Such is the brief and hurried *résumé* of what is happening to our music. We discover two tendencies, the revivalist and the literary. They represent the fissure in our Indian culture brought about by the conflict of two social forces, the economic and the momentum of traditions. Our society is breaking up into fragments, none too many as yet, as in post-War Europe, still sufficient in number to make all sociologists nervous. The ruling *élite*-group has yielded place to the educated groups consisting of all sections of the middle class. A certain amount of uncertainty has resulted, no doubt; yet it is nothing comparable to the confusion that has come in the wake of what has been called the Revolt of the Masses in Europe. The situation of our Indian culture is fraught with danger; yet it can still be met, provided the cultured groups become conscious of the truth of the following general conclusions:

(1) India has a culture of her own; it is one in the midst of variety and continuous amidst changes.

(2) This culture has to be continued by our youth.

(3) It has to make terms with the economic forces of the world.

(4) It must needs accept the emergent culture with good grace.

The practical suggestions, so far as music is concerned, are, first, a study of our classical music with the necessary historical knowledge that it has grown and will grow by adaptation to foreign music and the folk-music of our country-side; secondly, a study of the real motives behind the evolution of the new music, literary and bizarre no doubt, but symptomatic of the release of the spirit; and lastly, a definite encouragement of teachers of modern songs, folk-songs, etc., and a deliberate social policy to recognize the dignity of the musical profession. It is a matter of great consolation to find that our universities have been aroused by the insistent demands of our cultural situation, which is one of crisis. With imagination they may yet resolve it. Our institutions are usually lagging behind the events. The shorter the lag, the better for our culture.

V

LITERATURE

SANSKRIT KĀVYA LITERATURE

I. ORIGIN AND EARLY HISTORY

It was indeed a memorable day in the history of Sanskrit *kāvya* (poetry) when the sage Vālmiki pronounced—he did not know how—the *anushṭubh* verse (*śloka*) embodying a spontaneous utterance of pathos on the undeserved death of the male out of a pair of loving *krauñcha* birds. The poet himself cried out in utter astonishment: "What is this that has been pronounced by me?" He later knew that it was *kāvya*. Whatever value may be attached to the story, this much is certain that it typifies in a general manner the nature of Sanskrit *kāvya*, namely, that it strikes the human mind with something—perhaps a sense of joy and wonder—the inner character of which can hardly be described.

Thus the *Rāmāyaṇa* has perhaps been rightly regarded as the first (*ādi*) *kāvya*. Its charming, simple and at the same time ornate style has been reasonably held to have influenced the early 'artificial' epic poems, namely, those of Aśvaghosha and Kālidāsa. It clearly marks a transition between the Vedic and classical periods of Sanskrit literature. The so-called classical period differs from the Vedic not only in form but also in matter and spirit. The Vedic literature is generally highly religious in tone, whereas much of what is written in classical Sanskrit is profane in character. The former is a spontaneous outburst of the hearts of the ancient seers and sages, and is therefore so simple in form and spirit; while the latter, at least that much of it which has been preserved to us, coming as it does, after the speculative period of the Upanishads, often tends towards a moralizing spirit. It also displays a marked tendency to exaggeration: here the ideas are often expressed not simply and directly, but in a roundabout way, and this mode of expression is noticed in almost all the later poems, only the very best (e.g. those of Kālidāsa) being excluded. Another most important point to be noted is in connection with the classical Sanskrit language itself. It is no longer the simple and free language of the Vedas admitting a variety of forms for the expression of manifold ideas, but is, as it presents itself in literature, of a stereotyped nature—rigidly regulated by the grammar of Pāṇini. But it should never be supposed that classical Sanskrit is an artificial language created by grammarians. Grammarians can simplify and regularize language, but

no language can be made to order. There are ample evidences in the works of Pāṇini, Kātyāyana and Patañjali which prove beyond any reasonable shadow of doubt that the language (classical Sanskrit) of which they wrote their grammar was actually spoken in their own days. Moreover, we should bear in mind the philological dictum that every literary language must have as its basis some form of a spoken dialect. As for literary Sanskrit, it may not be unreasonable to admit that the Sanskrit for which Pāṇini wrote his grammar 'is essentially a legitimate development from the Vedic speech.' Indeed it would be seen that the language which appears in some of the hymns (e.g. *Purusha-sūkta*) of the tenth book of the *Ṛig-Veda* itself, as also in the Brāhmaṇas and the Upanishads, does not show a very great degree of difference from Sanskrit as taught by Pāṇini. It has been established long ago by Professor Liebich (under whom the writer of this paper had some training in the *Vyākaraṇa-śāstra*) that the language of the *Aitareya Brāhmaṇa* may very well be taken to represent Pāṇini's Sanskrit. We need hardly take any notice of the theory once put forward by some Western scholars that there was a Prakrit period of Indian literature preceding the Sanskrit period, and of the suggestion that the *Mahābhārata* originally existed in Prakrit and was in later times translated from Prakrit into Sanskrit. These views have already been proved to be equally untenable.

Another point in which classical Sanskrit differs from the Vedic is with regard to the medium of poetic expression. Verse has almost monopolized the classical Sanskrit literature, so much so that although prose was sufficiently developed in Vedic times, as is testified by the *Yajur-Veda*, the Brāhmaṇas and the Upanishads, in the classical period it is employed only in some technical branches of study such as grammar or philosophy or in commentaries; and as a poetic medium, it occupies a minor position, being used only in romances, fables and partially in drama.

In the *Rāmāyaṇa*, if the first and last books (*kāṇḍas*), which are held to be later interpolations, are left out of consideration, the remaining five books together generally conform to the characteristics of a *mahākāvya* (great epic) and give one genuine pleasure derivable from the reading of an excellent *kāvya*. Reference, in this connection, must be made to the other and greater Indian Epic, the *Mahābhārata*, which, as we see it now, is not the work of one particular author; nor can a definite date be assigned to either of the two Epics. The *Mahābhārata* is indeed an encyclopaedia of a large number of legends and myths accumulated through ages, and it was only at a later time that these were gathered into a whole in classical

Sanskrit. These two Epics not only supplied the later poets with inexhaustible material for an elaborate treatment, but the *Rāmāyaṇa*, in particular, also furnished them with models for the ornate style which developed in various ways in their hands. The influence of these two great works on Sanskrit literature in general and on the *kāvya* literature in particular is but too well known.

The earliest extant specimens of *kāvya* are found in the *Mahābhāshya* of Patañjali, dated about the middle of the second century B.C. Not only does Patañjali know of the *Bhārata* (most probably the *Mahābhārata* in one of its earlier forms), but he also mentions two dramatic poems—*Kaṁsa-vadha* and *Bali-bandhana*—and most likely refers to their actual representation, and a poem, *Vārarucha Kāvya*, which has unfortunately not come down to us. There are also references to stories which were current, dealing with the legends of Yavakrita, Yayāti, Priyaṅgu, Vāsavadattā, Sumanottarā and Bhīmaratha. Nor can we pass over the numerous citations—in illustration of Pāṇini's rules or Kātyāyana's supplement thereon—of lines taken evidently from poems of the classical type. These instances give clear indications of the early bloom of almost all the main branches of Sanskrit *kāvya* literature, including beast and bird fables and lyric and gnomic verses. There are quite a large number of such illustrative lines or stanzas, and they, being composed in some of the important metres, show incidentally the development of classical metres also. We should, in this connection, note another work, the *Chhandaḥ-sūtra*, attributed to the sage Piṅgala and reckoned as a Vedāṅga. The work, old no doubt, deals with both Vedic and classical metres, but cannot be definitely dated. It records, however, a multitude of metres by which later poets—especially lyric poets—sought to achieve a variation of metrical effect. That love was the most important theme of Sanskrit poetry even in this early stage of it is clearly testified by the names given to some of these metres. Thus some are epithets of the beloved, e.g. *Praharshiṇī* (she who is most joyful), *Vasanta-tilakā* (she who is the ornament of the spring), *Mandākrāntā* (she who moves at a slow pace), *Tanumadhyā* (the maiden with slim waist) and *Śaśi-vadanā* (moon-faced). Some other names show the poetic observation of animal life: *Hariṇī* (deer), *Siṁhonnatā* (stately like a lion), *Śārdūla-vikrīḍita* (pacing with the dignity of a tiger), etc. Others, again, are names derived from the plant-world, e.g. *Pushpitāgrā* (the top in blossom) and *Mālinī* (the flower-maiden).

There are other varieties as well. No one can fail to see that the very names of these metres are poetic in themselves. Nor can one reasonably deny the existence of a sufficiently developed poetical literature before the days of Piṅgala, which alone would justify the necessity of his systematic work on Prosody. It seems improbable that a writer on Prosody would go to create different metres; on the contrary his business is to record and define (and perhaps also to illustrate) accurately the metres already in use in literature.

We may here take note of the conditions under which Sanskrit poetry was produced and the environment in which it grew. Mention should first be made of the courts of princes. Most of the Sanskrit poets of the classical period were court-poets, or at least they spent the major part of the periods of their poetic activity in the courts of one or more princes. The poets often composed in praise of their royal patrons, to which some early inscriptions containing panegyrics bear ample testimony. The kings, in their turn, rewarded their panegyrists not only by their patronage but also by munificent monetary or other gifts. This gave the poets necessary freedom from the struggle for livelihood and supplied them with leisure for serious study and composition of literary works often of considerable merit. The kings themselves were usually men of taste who could appreciate real merit, and quite early in the history of the development of Sanskrit *kāvya*, it seems that in royal courts poets vied with one another to impress the royal judge with their comparative superiority. Under this court-influence Sanskrit poetry became 'aristocratic,' reflecting the graces as well as the artificialities of courtly life. A keen critic of literature would not fail to notice that in the poetry so developed 'sentimentality replaced sentiment, fancy predominated over passion and ingenuity took the place of feeling.'

If the court-life was responsible for the production and growth of Sanskrit poetry, the influence exercised on the theory and practice of this poetry by at least two of the well-known *śāstras*, namely, the *Kāma-śāstra* (the science of Erotics) and the *Alaṁkāra-śāstra* (the science of Poetics) was not less marked. The *Kāma-sūtra*, attributed to Vātsyāyana, is the oldest and best representative of the former class that has come down to us. This work on the science of Erotics may, in a sense, be held to have supplied the aspiring poet with an ideal sort of the hero and the heroine—their culture and taste, habits and passions, diversions and engagements, enjoyments and associates—in short, all that can usually be thought of as necessary in love-poetry. In the *Kāma-sūtra* there is a vivid picture

of the *nāgaraka*—the polished man-about-town who forms, so to say, the central figure of the work. He combines in himself all the qualities that would make a typical man of the world. He is not only a man of genuine culture, character and refinement, but is particularly well versed in the art and practice of love in its different phases, and has an extensive knowledge and experience of human nature, especially of women. Earlier poets showed considerable independence of thought and treatment, so that the influence of this *śāstra* is not so apparent as in the case of later writers, at whose hands the *nāgaraka* was no better than a professional amourist, and the connected topics treated in the *Kāma-sūtra* became stereotyped into fixed conventions. Almost the same remarks are applicable to the influence of the *Alaṁkāra-śāstra*. As the systematic grammar of a language presupposes the existence of the language in a considerably developed form, so we can think of the *Alaṁkāra-śāstra* only when *kāvya* literature, whose nature and form the *śāstra* examines, has sufficiently developed and produced a good number of works justifying the deduction of general rules for ideals. The writer of a Sanskrit *kāvya* had not only to satisfy his royal patron and a generally cultivated audience but also an assembly of expert judges called *rasika* or *sahṛidaya*, the man-of-taste whose judgement with regard to the excellence of a *kāvya* was final. Now this critic must have some criterion by which to judge the merit of a *kāvya*. Although there exists a great difference of opinion amongst the earlier and later writers of the *Alaṁkāra-śāstra*, this much is generally agreed that the ultimate end of *kāvya* is to suggest *rasa*—a condition of aesthetic enjoyment. This is not the place to enter into a discussion of the definitions of *kāvya* given by different theorists. We shall be content with just mentioning the names of some of the outstanding works and their authors. The earliest extant work of this *śāstra* is not one on Poetics proper, but on Dramaturgy which deals with *rasa*, *nāyaka* (hero), *nāyikā* (heroine), and other allied topics only so far as they relate to the drama—this is the celebrated *Nāṭya-śāstra* attributed to the sage Bharata. Its commentary, the *Abhinava-bhāratī* by Abhinavagupta, is a stupendous work of very great importance. Other outstanding works are Bhāmaha's *Kāvyālaṁkāra*, Daṇḍin's *Kāvyādarśa*, Vāmana's *Kāvyālaṁkāra-sūtra-vṛitti*, *Dhvanikārikā*, Ānandavardhana's *Dhvanyāloka*, Kuntaka's *Vakrokti-jīvita*, Mammaṭa's *Kāvya-prakāśa*, Viśvanatha's *Sāhitya-darpaṇa* and Jagannātha's *Rasa-gaṅgādhara*. In these works (in one or the other) there are discussions about words (*śabda*), their power and sense, different *rasas* with all their paraphernalia, the character and types of the

hero, his rival (*pratināyaka*), the heroine, concepts like *guṇa* (poetic merit), *rīti* (proper arrangement), *alaṁkāra* (figures of speech), *dosha* (poetic blemishes), etc. In noting the influence of the theorists on the actual practice of the poets it has to be observed that it is only in the productions of poets of lesser abilities that the rigid artistic conventions prescribed by the *śāstra* were followed, rather too faithfully, so that the untrained freshness of sentiment and spontaneity of expression are hardly to be noticed. Their works are the products of studied efforts, and there is little in them that is worth the name of poetry in the true sense of the term. It must, however, be borne in mind that this criticism so often advanced is true of the lesser poets only. In the case of the greater poets it must be conceded even by the most exacting of the critics that these poets handle the romantic commonplaces and other conventional formulas with perfect mastery, and that their works never fail to exhibit clearly the remarkable power of treatment and real poetic insight of their authors. They infuse the entire production of their poetic mind with a life which at no place appears insipid. The poem runs so smoothly and spontaneously that the interest of the reader never flags.

For the earliest conclusive evidence of the existence of *kāvya* literature in almost all its main branches—epic and lyric poetry, romance, popular tales, beast and bird fables and the drama—we must turn to that epoch-making work, the *Mahābhāshya* of Patañjali, to which reference has already been made. Unfortunately no work of the *kāvya* type has been preserved to us which can be dated before the time of Aśvaghosha. We have, however, some inscriptions which fall during this period. They are not *kāvyas* in themselves, but their language and style go to prove beyond doubt that the writers of these inscriptions were perfectly familiar with a considerably developed *kāvya* literature, and perhaps also with a system of rhetoric that described the essential constituents of true poetic composition. The reference, in the first place, is to what is known as the Girnar Rock Inscription of Rudradāman dated about the middle of the second century A.D. This is the earliest known (engraved) document where Sanskrit is used in preference to Prakrit or vernacular, which was exclusively employed in inscriptions prior to this. The inscription written in prose throughout uses rather long compounds, is in ornate *kāvya* style and even employs figures of speech of both sound and sense. The epithet 'prose and verse adorned by the qualities of simplicity, clearness, sweetness, variety, beauty and elevation arising from the use of conventional poetic terminology' most probably points to the author's acquaintance

with some early work on Poetics which required among others these qualities in a poetic production of literary merit.[1]

Reference, in the next place, is to the Nasik Inscription of Siri Puḷumāyi dated about the same time as the preceding one. This Inscription, however, is written not in Sanskrit but in Prakrit. Nevertheless, one can by no means doubt that its author was thoroughly acquainted with the Sanskrit *kāvya* style—its peculiar devices of heightening the effect by bombast style, use of compounds sometimes even longer than those in the Girnar Inscription and of some more figures of speech and, above all, allusions to epic heroes and to divine and semi-divine beings meddling in human affairs of the writer's royal patron.

From the evidence of these inscriptions it can be safely inferred that there did exist a sufficient number of Sanskrit *kāvyas* in ornate and artificial style, but that these could not withstand the ravages of time and popular taste. Kālidāsa's works surpassed their predecessors so much both in thought and treatment that the earlier and presumably much inferior specimens were allowed to die a natural death. But the works of one of his predecessors did survive, namely, those of Aśvaghosha, a Buddhist writer[2] who is believed to have flourished in the first century A.D., which, leaving aside the *Rāmāyaṇa*, are the earliest extant connected works in *kāvya* style. His two works, the *Saundarānanda* and the *Buddha-charita*, were written in a style which profoundly appealed to the popular mind. The *Saundarānanda*, which derives its name from the names of the hero (Nanda) and the heroine (Sundarī), deals with the former's forced rejection of the latter in spite of his deep attachment to her and his ultimate conversion by his step-brother Buddha to the life of a recluse. This was the subject matter of the poem; but the poet had a deeper object in view, as it would appear from the colophon of the work that he composed in the popular *kāvya* style in order to inculcate upon the people the highest truths in simple language and thereby to lead them away from worldly enjoyments to complete renunciation. The *Buddha-charita*, which originally consisted of twenty-eight cantos and which must have given a full account of the life of Buddha, has unfortunately not come down to us in its complete form. Yet it bears adequate evidence of the

[1] A similar reference is also found in the *Artha-śāstra* attributed to Kauṭilya, II. x—on *śāsana*.

[2] The contribution of Buddhist writers to the different branches of Sanskrit literature in the wider sense is indeed remarkable. Their works are marked not only by a perfect mastery of the subjects treated but also by clearness of thought and simplicity and grandeur of language.

grace and beauty of the literature that was growing and, together with its author's other work already mentioned, it not only serves as a model for the writers of the later *mahākāvyas*, but also guides the earlier theorists of poetry to characterize that special branch of literature. Daṇḍin, author of the *Kāvyādarśa*, describes in some detail the characteristic features of the *mahākāvya*, and in this he must have used the works of Aśvaghosha, Kālidāsa, Bhāravi and others as the models. Some of the important features of a *mahākāvya* compiled by him are as follows: it must be divided into cantos which must not be too long and each of which must end with a change of metre; it must begin with an obeisance to some particular deity, a benediction or a direct introduction of the subject matter; the main theme should be taken from some old narratives or tradition (leaving thereby an adequate scope for the poet to display his powers of description as well as invention with regard to minor details); it should contain descriptions of cities and oceans, hills and seasons, rising and setting of the sun, sports in gardens and waters, marriages, journeys, battles, etc. Aśvaghosha's works do not, of course, satisfy all these requirements; but we must not forget that they were only the earliest specimens of this branch of literature, and the idea of displaying the power of description of all external objects in their diverse aspects had not yet been accepted as the poet's ideal: this occurred gradually to the later poets, and by the time Daṇḍin formulated his theory of poetry, the extant literature supplied him with abundant materials to form a clear-cut notion about the *mahākāvya* as a class of composition. The narration of the main trend of events was the principal object of the earlier writers, Aśvaghosha and Kālidāsa—the description of the nature, grandeur and beauty of any particular object came as a matter of course in their works. Aśvaghosha's style possesses the simplicity and lucidity which prevail throughout Kālidāsa's poems, but it lacks much of the latter's grace and maturity of diction. The presence of *pada-lālitya* (charm of diction), which consists mainly in a harmonious combination of grandeur, sweetness and softness owing to the judicious use of *śabdālaṁkāras* (artistic sounds) and which has been so highly spoken of in the composition of Śrīharsha, is first noticed in the works of Aśvaghosha. The *Rāmāyaṇa* has been rightly regarded as one of the sources of Aśvaghosha, for apart from the elegance and simplicity of Vālmīki's style, the *Buddha-charita* presents, in many places, similarity with the *Rāmāyaṇa* in regard to its description and situation and even to 'the broad structure of its episode.'

II. THE MOST FLOURISHING PERIOD

It is too well known that chronology is a weak point in Indian literature. Only a few of the extant works are dated, and for the dates of the vast majority of the remaining works we have at best to be satisfied with fixing roughly an upper and a lower limit. We can only say that these would fall between the works or authors quoted or referred to perchance by the writer in question and those quoting or referring to him. The precise date is still unsettled, so that sometimes we may have to oscillate between centuries wide apart. Take, for instance, the case of by far the best of Sanskrit poets, viz. Kālidāsa. Some would like to place him in the second century B.C., while others would bring him down to the sixth century A.D. And had we not possessed the Aihole Inscription of 634 A.D., we do not know how many other dates would have been suggested for him. In addition to the testimony of a few such inscriptions, the introductory verses of Bāṇabhaṭṭa's *Harsha-charita* is of great importance in this connection. The date of Bāṇa is known definitely. He was a court-poet of King Harshavardhana of Thaneswara who reigned from 606 to 648 A.D. Now in those introductory verses Bāṇa names some of his most illustrious predecessors and bestows high praises on them in appreciation of their poetic merit. We have therein the names of Vyāsa (whose name, by the way, is more descriptive than proper), of the (*Mahā*)*bhārata* and *Bhārati Kathā*, of the authors of *ākhyāyikās* (narratives), of the *Vāsavadattā* (presumably a *kathā-kāvya*—poetic tale—perhaps the one by Subandhu), of a magnificent prose composition by Bhaṭṭāraharichandra,[1] of Sātavāhana (or Hala),[2] of Pravarasena to whom the *Setubandha*[3] is attributed, of the dramatist Bhāsa (who is respectfully mentioned also by Kālidāsa in the prelude to his *Mālavikāgnimitra*), of Kālidāsa, of the *Brihatkathā*[4] (evidently of Guṇāḍhya) and of Āḍhyarāja[5] (perhaps the name of a poet). Besides offering his meed of praise to these authors or works, Bāṇa gives a full account of himself and his family. Only a few (e.g. Bilhaṇa and Maṅkha) of the Sanskrit poets have done this. A few again have given only a meagre account of them-

[1] No work of this author has come down to us. But in the celebrated Prakrit *kāvya Gauḍavaha* we read of a Hariyanda = Skt. Harichandra. There is just a possibility that the same author is named here.

[2] The celebrated compiler of the Prakrit Anthology *Sattasai*.

[3] Otherwise known as *Rāvaṇavaha* written in the Māhārāshṭrī Prakrit which is considered to have been Prakrit *par excellence*: cf. Daṇḍin: *Kāvyādarśa*, I. 34.

[4] This again was in Paiśāchī Prakrit which Daṇḍin calls by the name of 'Bhūtabhāshā'; cf. *Kāvyādarśa*, I. 38.

[5] The word has proved a puzzle to scholars; cf. *J.R.A.S.*, 1903.

selves, e.g. Bhaṭṭi, Bhavabhūti and Śrīharsha (author of the *Naishadha-charita*). One of the chief causes of the indifference of our poets about giving their personal life and history must be found in the attitude in which worldly life was viewed in India in those days—namely, its utterly transitory character, wherefore any accurate account of man's life and deeds was considered to be of no great value.

A glance at the names of poets mentioned by Bāṇa at the beginning of his *Harsha-charita* will show that he names most of the more important poets of repute who preceded him—with but two important omissions, viz. Bhāravi and Daṇḍin (author of the *Daśa-kumāra-charita* proper). But this fact may be accounted for by holding that neither of them preceded Bāṇa by many years and had not as yet gained a wide reputation so as to have respectful recognition at Bāṇa's hands. From the historical point of view it would be true to say that the period beginning after Aśvaghosha and ending in Bāṇabhaṭṭa, *i.e.* the middle of the seventh century, is the most flourishing period of Sanskrit *kāvya* literature.

On the revival of Brāhmaṇic culture under the Gupta kings, Sanskrit literature got a new impetus and munificent royal patronage. The sense of political security under Gupta supremacy contributed in no small measure to the cultivation of finer arts including literature. Most of the works of art produced in this period are of considerable merit and do reflect a national spirit comparatively free from foreign inspiration. It was indeed the Golden Age of Sanskrit literature. Kings of this period were all great patrons of learning whose cares were not wholly absorbed in the administration of their empire and in the extension of their territory, but they found time to evince an abiding interest in the poet's art and the production of genuine poetry in Sanskrit, which was now the language of the court and of learned men.

In giving a brief account of *kāvya* literature of the period we should first refer to the two *praśastis* by Harisheṇa and Vatsabhaṭṭi. The first, dated about 345 A.D., is a panegyric of Samudragupta inscribed on a pillar at Allahabad. The inscription itself, written partly in prose and partly in verse, calls itself by the name of *kāvya* and in addition gives clear evidence of the existence of highly developed epic poetry in the period. The second one, inscribed in a temple at Mandasar (473-4 A.D.), is inferior in quality to Harisheṇa's *praśasti*. It was composed with much effort and followed the rules prescribed by Poetics. This inscription also is very important for the abundant proof it gives of the cultivation of epic poetry in those days.

Next we come to the towering figure of the period, and as a matter of fact of the entire period of the history of Sanskrit *kāvya* literature—the great Kālidāsa. The space at our disposal does not allow us to do justice to his genius. We shall have to be content with noting only some of the salient features of his poetry. Now, tradition connects him with a 'Vikramāditya,' which title several kings of ancient India had. It is now generally believed that here the reference is to Chandragupta II of the Gupta dynasty. A great number of works pass under the name of Kālidāsa—some at least without any justification whatsoever. There were perhaps several poets who had or at least took upon themselves the same name as that of the great poet. This fact led Rājaśekhara to surmise that there were no less than three Kālidāsas preceding him. Kālidāsa himself says that the name 'Purushottama,' although applicable to many, has usually been usurped by the great god Hari. So, following him we may also say that in Sanskrit literature we recognize one Kālidāsa only—the Kālidāsa who is the author of the *Abhijñāna-śakuntala*,[1] *Meghadūta*, *Raghuvaṁśa*, *Kumāra-sambhava* and *Ṛitu-saṁhāra*, who has won unstinted admiration from Goethe, and who has been of the greatest value to India in winning for her ancient literature a distinct place in the literatures of the world.

The *Ṛitu-saṁhāra* is undoubtedly from the pen of Kālidāsa, but is a youthful production of the great poet, as the language and treatment would abundantly show. One great charm of the work is its perfect lucidity and the true poetic passion with which the different seasons are described. Herein we find the poet of the *Meghadūta* in the making. Every season stirs the lover's mind with emotion by the characteristics peculiar to each. Even this poem gives clear indications of Kālidāsa's keen observation of and loving sympathy with nature as also the influence she exercises on the human mind.

It is only for convenience of treatment that we turn to the *Meghadūta* next—which no doubt is one of the mature works of Kālidāsa. In India the work marks the beginning of a species of *kāvya* to which the name *dūta-kāvya* has been given. It has also been suggested that our poet is perhaps indebted, at least for the outline, to a Chinese poet whose work long preceded Kālidāsa's. The close contact between India and China in those days, as can be proved from references in Kālidāsa's own works, renders the suggestion worth consideration. In addition the poet drew

[1] As Sanskrit drama (*dṛiśya kāvya*) is being separately treated for this volume, we shall confine ourselves to *śravya kāvya* (poetry) only.

inspiration also from the *Rāmāyaṇa*, as has been betrayed in the line: *ityākhyāte pavanatanayaṁ maithilīvonmukhī sā*. The *Meghadūta* is in its own way the finest elegiac gem, the like of which is perhaps difficult to find in the whole literature of the world. Written throughout in the flowing *Mandākrāntā* metre, which on its own merit possesses the peculiar power of expressing the sentiment of pathos, the *Meghadūta* not only holds before us the charming beauty of nature, but also brings home to our mind most effectively the simple and unostentatious truth of the human heart. The vivid description of the route with all its surrounding beauty, both natural and artificial, serves only to prepare the reader's mind against the emotional outbursts of a loving heart groaning under the curse of separation—the most untoward catastrophe. We sympathize with the Yaksha as he proceeds with his tale of sorrow and the message of love. We try to feel with all our heart the sincere and telling nature of the unfortunate exile's words. Here the master-artist excels and gives us the type of the human heart which submits to the most unkind decree of Heaven silently and always sees even in that darkest cloud a silver lining—a ray of hope. That is why the message of reunion is there. Kālidāsa speaks the pining human heart out, and in his work philosophy blends with poetry in a lively spirit of co-operation. There is no other book in world literature which delineates the spirit and peculiar merit of the rainy season so effectively. The inward and silent pathos of external nature as well as of the heart has been set forth for ever in human language by the poet.

The great popularity of the work led to a large number of imitations almost with the same theme, often in the same metre and sometimes using the same words and phrases as those of Kālidāsa. No less than fifty such works are actually known to exist. Some of these are good, but none is even half as beautiful as Kālidāsa's *Meghadūta*.

Kālidāsa has left us two *mahākāvyas*—the *Kumārā-sambhava* and the *Raghuvaṁśa*. The *Kumāra-sambhava* has for its theme the birth of the war-god Kumāra or Kārtikeya and is found in many editions complete in seventeen cantos, of which the first eight only are generally believed to be the work of Kālidāsa. This leaves the poem incomplete, and the reason why it was left unfinished will perhaps never be solved. The work is unquestionably one of the poet's mature productions. It opens with a description of the Himalayan range, of the birth and development to youthful age of Pārvatī, the daughter of the mountain-king; Nārada comes and points out that the great god Śiva will make a suitable husband

for her. Then we read how the gods oppressed by the demon Tāraka approach Brahmā, who advises them to effect a union of Śiva and Pārvatī, whose issue would liberate them from the demon. At the instance of Indra, the love-god Madana accompanied by Vasanta (Spring) comes to the region where Śiva was absorbed in deep meditation and Pārvatī was attending to an ascetic's needs. Madana was about to strike, when Śiva, who felt disturbed, burnt him to ashes with fire emanating from his eye on the forehead and himself left the place. The fourth canto is full of real pathos in the lamentation of Rati for her dead husband. She was preparing to follow him in death, when a voice from heaven assured her of her reunion with her beloved only after the union of Śiva and Parvatī. Pārvatī was determined to win Śiva; so, when her physical charms failed, she resolved to attain her end through penances. Pleased with her super-human austerities Śiva came to her hermitage in the guise of a young *brahmachārin*, and being satisfied with her unflinching devotion to him, assumed his own divine form and embraced her. Then follow descriptions of the wooing of Pārvatī for Śiva by the seven seers and Arundhatī, and the wedding with other connected ceremonies. The eighth canto (which even some do not admit as genuine) describes, after the *Kāma-śāstra*, the enjoyment of the newly married couple.

From what source Kālidāsa got the main story of his *Kumāra-sambhava* is not known, but it is probable that he drew upon some older Purāṇa. Apart from that, the influence of the *Rāmāyaṇa* is clearly seen in many points of detail. The *Kumāra-sambhava* also shows the genius of the poet most markedly. Description of external objects is one of the main characteristics of Sanskrit *kāvya*, and Kālidāsa's power of description is incomparable. The scenes appear to be moving before our very eyes—such is the skill with which he handles things. There is another very important point which may be especially noted with regard to the *Kumāra-sambhava*. As love is the principal sentiment which runs through all the writings of Kālidāsa, it is sometimes thought that he advocates the cause of passionate love. But that is not the correct reading of his poems. The burning of Madana and consequent failure of Pārvatī to win Śiva by her beauty point unmistakably to the poet's disapproval of impulsive passionate love. The same thing has been shown by the curse of Durvāsas which separated Dushyanta and Śakuntalā—the passionate lovers, and also by the curse of one year's exile of the Yaksha who neglected his duty for passionate love. Thus Kālidāsa everywhere attempts to impress upon his readers' mind that 'mere

impulsive passion must normally bring suffering in its train.' He pleads for real love—which has always been upheld in India—the love which is not merely centred round the pair of lovers, but always shows due consideration of the environment, the society and of humanity at large. Whenever there has been a deviation from this ideal, punishment has come—the couple has suffered.

If the *Kumāra-sambhava* does not satisfy all the conditions of a *mahākāvya* as laid down by writers on Sanskrit Poetics, Kālidāsa's *Raghuvaṁśa* leaves nothing wanting in that direction. It is undoubtedly the masterpiece in this branch of *kāvya* literature, which is the most difficult of execution. Kālidāsa has succeeded marvellously in giving us a true court-epic. The *Raghuvaṁśa*, as the title suggests, sketches the history of the line of Raghu, a celebrated king of the solar dynasty. The poem opens with a description of the dynasty, and as it advances it portrays the life and deeds of each one of the kings from Dilīpa down to the descendants of Rāma's son Kuśa. To compose a poem of nineteen cantos that is at once dignified and entertaining, to fill it with suitable incidents introduced naturally, to enliven it with a variety of attractive characters and vivid descriptions, and, above all, to maintain throughout this long work a uniform propriety of sentiment and dignity of style, unquestionably bespeak the highest achievement of poetical genius. To note only a few of the most absorbing episodes of the poem, we may mention the touching incident about Nandinī—the hermit's cow, the heroic dialogue between Indra and Raghu, Raghu's *digvijaya* (conquest of the quarters), Indumatī's *svayaṁvara* (choice of a husband), Aja's lamentation, the aerial journey of Rāma and Sītā from Laṅkā to Ayodhyā, the message that Sītā sends through Lakshmaṇa when she is exiled, and the picture of the deserted city of Ayodhyā drawn by its presiding deity before Kuśa in a dream. Each one of these episodes hangs upon the main story so naturally and is so elegant and well finished that it deeply affects the reader, absorbs his interest and leaves an abiding impression on his mind. The *Raghuvaṁśa* is indeed 'sublime in description, tender in sentiment and bold and lively in expression.' For the main plot of the poem Kālidāsa is, of course, indebted to Vālmīki's *Rāmāyaṇa*. But more often our poet has improved upon the ancient sage.

Speaking generally about Kālidāsa we may note that Indian critics refer to the special excellence of his similes. This remark almost amounts to a truism. But that is not all. Two other qualities, viz. profundity of sense, and sweetness and suitability of words, may also be

noticed almost everywhere. All his writings taken together, Kālidāsa appears to be a typical representative of whatever was best in the Brāhmaṇical culture of the age. He was perhaps a Śaiva, but liberal enough to respect other sects as well. He was influenced, no doubt, by the *Alaṁkāra-śāstra*, the *Kāma-śāstra* and the *Artha-śāstra*. But he was too independent to follow the prescriptions of the *śāstras* blindly. He was always able to subordinate them to his poetic genius and used only such of the precepts as would contribute to heighten the effect of his writings. He was vastly erudite; he had an abundance of ideas, a thorough mastery over the language, and a true poetic insight—what else could he possibly need? And in his writings thought and expression are everywhere well matched.

Before passing to the next writer of *kāvya* proper, we shall refer briefly to two works whose dates have not yet been settled definitely and will perhaps remain so for all times to come. These are the *Pañcha-tantra* and the *Bṛihat-kathā*, to neither of which the designation of *kāvya* is strictly applicable. The former falls under the class of literature known as Didactic Fable, in which beasts and birds are presented as principal characters, and it is not unlikely that in the early period of its development it was influenced by the Buddhist *Jātaka* stories where Bodhisattva sometimes appears as one of the lower animals. Germs of such fables can, however, be traced back to the Upanishads and even to the *Ṛig-Veda* itself. The fables as we have them in the *Pañcha-tantra* (of which the original work is lost, perhaps irrevocably) were written for a definite purpose, namely, the instruction of young boys—especially princes, and are thus essentially connected with the *Artha-śāstra* and the *Nīti-śāstra*. They are written partly in verse and partly in prose. The story is continued in prose, while the verse embodies the moral. They have another characteristic of inserting a story within a story. The meaning of the word *tantra* in the title *Pañcha-tantra* is not very clear. It is usually translated as 'book,' but may probably mean 'topic.' The different topics treated are the separation of friends, the winning of friends, war, peace and loss of one's earnings. That the work became popular quite early is proved not only by the fact that it was translated into Pahlavi and Arabic and through the latter into most of the principal languages of Europe, but also by the different versions in which it existed in India itself. One important version is the *Tantrākhyāyikā* and another *Hitopadeśa* (very popular, especially in Bengal).

The *Brihat-katha* was written by Guṇāḍhya in Paiśāchī Prakrit. The word *kathā* here means simply 'tale,' and it has nothing to do with *kathā*, one of the two broad sub-divisions of Sanskrit prose literature (*gadya-kāvya*). It is not unlikely that interesting tales current among the ordinary people were only compiled by Guṇāḍhya in the form of a book, and that is why it was in Paiśāchī Prakrit, which was perhaps the vernacular dialect of the author. Here also the setting of a tale within a tale is found. The original *Brihat-kathā* does not exist, but we have several redactions of it, some in prose and some in verse. Of these, Somadeva's *Kathā-sarit-sāgara*, in verse, is the most popular one at present. The original *Bṛihat-kathā* was undoubtedly a very popular work, not only because it has been referred to in glowing terms by Bāṇa, Dāṇḍin and others, but also because it has been unhesitatingly recorded as a work almost as well-known as the *Rāmāyaṇa* and the *Mahābhārata* by Dhanika, the author of the *Daśarūpaka*.

We return to *kāvya*. The *Kirātārjunīya*, the only known work of Bhāravi, cannot be dated later than the latter part of the sixth century A.D., as he is respectfully mentioned along with Kālidāsa in the Aihole Inscription of 634 A.D., but is not named by Bāṇa. The theme, based on the Vanaparvan of the *Mahābhārata*, culminates in the fight of Arjuna with the great god Śiva in the guise of a Kirāta (hunter), as a result of which Arjuna receives the *pāśupata* missile from the deity. Bhāravi begins with a direct introduction of the subject matter. The spy whom Yudhishṭhira had sent to ascertain how Duryodhana was ruling the kingdom returns with reports of the latter's very successful administration. Draupadī hears of this and urges Yudhishṭhira to take immediate steps to redress their grievances. Bhīma strongly supports Draupadī, but Yudhishṭhira pacifies him. In the meantime Vyāsa arrives and advises Arjuna to gain divine weapons by propitiating Indra. Then comes the parting scene where Draupadī again speaks like a true Kshatriya lady. Arjuna departs escorted by a Yaksha amid the splendours of the Autumn. The Himālaya in its majesty is in sight. As Arjuna reaches there, the Yaksha disappears. While Arjuna is undergoing penances, Apsarases, under the direction of Indra, who wants to test his son's devotion, tempt him, but Arjuna remains firm. Then Indra himself, disguised as an old ascetic, comes to him and makes a show of dissuading him from this sort of penances for worldly gain. Arjuna refutes his arguments with all the vigour of a wronged Kshatriya, when Indra manifests his own form and advises him to worship Śiva. While Arjuna is doing this, Śiva appears

disguised as a Kirāta. A demon, in the form of a boar, is about to attack Arjuna, when both he and Śiva strike him with an arrow. As Arjuna is going to take back his own arrow, he is challenged by Śiva's messenger, who claims that it belongs to his master. Arjuna gives a spirited retort. Then follows the battle with Śiva, which is described with rare verbal jugglery. At last the fight is over. Śiva, highly pleased with his heroism, grants him the *Pāśupata* weapon. Many other gods bestow on him similar favours, which render him invincible. On the successful completion of his mission, Arjuna starts back for his forest home with a heart full of joy and hope.

The *Kirātārjunīya* has, by its superb qualities, obtained a distinguished position in the whole history of Sanskrit *kāvya* literature and is rightly reckoned as one of the five *mahākāvyas*, the other four being the *Raghuvaṁśa*, *Kumāra-sambhava*, *Śiśupāla-vadha* and *Naishadhiya*. It is indeed a most vigorous and spirited poem, the like of which is difficult to find in the entire range of Sanskrit literature. Unlike the vast mass of Sanskrit poetical works, the main sentiment of Bhāravi's poem is heroic (*vīra*), which has been delineated by the poet with unique success. His descriptive power as manifested in the vivid descriptions of the Autumn in canto IV, the Himālaya in canto V, Arjuna's penances in canto VI, the sports of the Apsarases in cantos VIII and IX and the fight between the Kirāta and Arjuna in the last four cantos—is admirable and is only slightly inferior to that of Kālidāsa and Aśvaghosha. Great, again, is his power of characterization as displayed in his portrayal of the principal characters of his poem, each one of which bears a distinct stamp of its creator. Even minor characters like the spy in canto I, Vyāsa in canto III and the messenger in canto XIII are true to life. In Draupadī, Bhāravi has drawn the picture of a highly spirited Kshatriya queen smarting under the disgrace to which she herself and her husbands have been most undeservedly subjected. Bhīma is a stubborn fighter only too eager to take revenge upon the deceitful enemies. Yudhishṭhira is a wise politician, perfectly self-controlled—a lovable picture of serenity, patience and dignity. Arjuna, the hero of the poem, is again a true Kshatriya who combines in himself the qualities of both of his elder brothers. He is a matchless warrior imbued with a keen sense of self-respect, who is prepared to undergo any amount of hardship to maintain the prestige of his illustrious family, and would spurn even *mukti* (final emancipation) for avenging himself on his enemies.

From all these it seems Bhāravi himself was a true patriot, and fine lyrical touches may be observed in many places in his poem, which, by the way, exhibits clearly the influence of the sciences of Statecraft, Poetics, Prosody and Grammar. It has been remarked that he is unparalleled in the manipulation of dialogues for the advancement of his plot. Indeed, his *Kirātārjunīya* is for the most part carried along through dialogues, which are usually captivating. The distinctive feature of Bhāravi's poem is said to lie in its *artha-gaurava* or profundity of sense. He himself mentions this as one of the merits of speech. In fact, he seems sometimes to have indirectly praised his own composition.[1] Mallinātha, his commentator, is not far from the truth when he says that Bhāravi's writing is like the cocoa-nut, which has a rather hard exterior but contains sweet kernel within. The poet had a vast and varied experience of human nature, and his poem abounds with proverbial expressions of the highest excellence. Besides respectful reference in some of the extant works, there are many anonymous verses[2] in appreciation of Bhāravi's poem, which must have earned for itself a wide popularity and was probably held as an ideal *mahākāvya*, so that Māgha in the eighth century wrote his *Śiśupāla-vadha* on the model of this work. Most (but certainly not all) of what has been said of Kālidāsa is applicable to Bhāravi also. If Bhāravi's work appears slightly artificial, it is a trait of Sanskrit *kāvya* itself and does not seem painful to most Indian minds; and although in some places he is more pedantic than poetic, to us his *kāvya* is a real literary treat, and by reason of the many excellences it possesses it richly deserves a position lower only than that of Kālidāsa and Aśvaghosha.

It is indeed very difficult to determine the date of Daṇḍin, the author of the *Daśa-kumāra-charita*. We cannot side with those scholars who would make this Daṇḍin the author of the *Kāvyādarśa* as well. The view that the former is a youthful work of the poet, while the latter is his mature production, does not appeal to us. A writer on Poetics setting forth ideals of literary composition can hardly be expected to write, only a few years ago, a romance replete not only with vulgarity but at some places with obscenity. True, tradition connects three works with Daṇḍin's name, of which the third has not been definitely identified, and

[1] Cf. I. 4, II. 27-28, XI. 38-41, XIV. 3-5.

[2] One in particular may be noted:

"He who tries to measure the gravity of Bhāravi's speech, and the lucidity that is noticeable in every word of it, certainly wishes to fathom an ocean of nectar."

we would say neither has the second. The identity of name alone is mainly responsible for ascription to the same author of works really belonging to different authors, and for the theories based on it. The style and language of the *Daśa-kumāra-charita*, comparatively free from latter-day artificialities, have much that would fit in with the age of Bhāravi, and we are even inclined to place it a few years before the *Kirātārjunīya*, although there is no evidence to establish it.

Unfortunately the entire text of the book has not come down to us. On the face of it, the *Pūrva-pīṭhikā* and the *Uttara-pīṭhikā* are not from Daṇḍin's pen, but later additions, of which the former was composed quite early. It is indeed difficult to include the *Daśa-kumāra-charita* under the *kathā* (fiction) class of *gadya-kāvya* (prose epic); neither is it an *ākhyāyikā*, because the historical basis, which is almost universally demanded in it, is wanting, although, as the title shows, it is a *charita-kāvya* (biographical epic). It is just possible that the missing part at the beginning contained an account of the poet and his family (as in the *Harsha-charita* of Bāṇa), and that originally the romantic tale centred round one prince only, viz. Rājavāhana. But these are all surmises, and at the present state of our knowledge nothing can be said definitely. The work, as we have it now, conforms more to the characteristics of a *kathā* in that it has a charming plot and is written throughout in prose with only a few verses here and there, and that it is a pure romance with no historical thread running through it. But it differs from a *kathā*, inasmuch as it is divided into chapters styled *uchchhvāsas*—a characteristic of *ākhyāyikā*. It is because of such difficulties that Daṇḍin of the *Kāvyādarśa* could not fix any broad line of demarcation between the two types, but held that both *kathā* and *akhyāyikā* belonged to the same class of poetic composition, only styled differently.

Daśa-kumāra-charita, the title of the romance, suggests an account of the adventures of ten princes. But the work in the eight extant chapters tells us about eight princes only; even the tale of Viśruta in the eighth chapter is not complete in Daṇḍin's text, but is continued and completed in the *Uttara-pīṭhikā*. The main story, put in a nutshell, runs thus: Rājahaṁsa, a benevolent king of Magadha defeated by Mānasāra, the king of Mālava, took refuge in the Vindhya Hills, where a son—the future Rājavāhana—was born to him. About the same time nine other destitute young princes were brought to Rājahaṁsa, who very kindly brought them up together with his own son. As they all grew up, they started together to try their fortune. In the course of their wanderings, one day

they met with a Kirāta dressed as a Brāhmin, and at his request Rājavāhana accompanied him to the region of the demons. There, with the help of magic, the Kirāta married the beautiful daughter of the demon-king, and, as a token of his gratefulness, gave Rājavāhana a magic jewel, with which the prince returned to the world of men. The other princes had in the meantime set out in different directions to look for him. Ultimately they are all reunited, and each one of them narrates his experiences during the period of search. The whole of the book is devoted to these narrations, from which we get a picture of a world of wonders, of a society where theft was practised as an art, where courtesans played an important part, where no deed was considered too heinous to achieve one's end, where love appeared as a most passionate impulse demanding immediate satisfaction, where all sense of morality was often given a go-by. Even with all these, it would be a mistake to suppose that morality, good conduct, propriety and honesty have no place in Daṇḍin's writings, for these also are illustrated in a number of cases.

In estimating Daṇḍin as a writer of prose *kāvya* we may note that he occupies the same position in the history of Sanskrit prose literature as Kālidāsa does in that of Sanskrit poetry and drama. He is by far the best prose-writer. His style, simple, easy and at the same time elegant, is free from the artificialities of later prose—although an attempt to exhibit 'stylistic tricks' may be seen here and there; but these are few and far between and should be treated as exceptions. Take for instance the writing of a whole chapter (ch. VII) without labials, because the narrator had his lower lip badly injured by his lady-love! Daṇḍin shows undoubted skill in his use of the language. His prose, both in narration and in speeches, is perfectly suited to the theme, and is not too elaborate like that of Subandhu or Bāṇa. He is a master of that excellent style (*rīti*) called Vidarbhī. Traditional estimate gives him special credit for a graceful diction (*pada-lālitya*). He uses compounds with moderation. His command over the vocabulary is clearly manifest in the fact that in describing the beauty of a sleeping maiden in two places, he has not repeated a single epithet. Daṇḍin is particularly skilful in the art of characterization. He has, like Bhāravi, infused real life into his characters, not only the principal ones but the minor characters as well. Thus in the second chapter, which is perhaps the best, all the characters (e.g. the young courtesan, the ascetic Marīchi and the ruined merchant Vasupālita) are living and strike us on account of their individuality. Of real wit and humour there is not much in Sanskrit literature which is not

commonplace or which appeals to the modern taste. In this respect again Daṇḍin happily proves an exception. His real sense of humour is noticeable almost throughout the *Daśa-kumāra-charita*.

The date of Subandhu is not definitely known, but we may place him before Bāṇa, who appears to refer to his *Vāsavadattā* in one of the introductory verses of the *Harsha-charita* and perhaps also of the *Kādambarī*, in the epithet *atidvayī kathā*, which means, 'surpassing the other two well-known *kathās*' (the *Bṛihat-kathā* of Guṇāḍhya and the *Vāsavadattā*). The work falls in the category of *kathā* and cannot be an *ākhyāyikā*, as the older *Vāsavadattā* referred to by Patañjali was. The story briefly put is: Kandarpaketu, son of king Chintāmaṇi, dreams of a very beautiful maiden and sets out with his friend Makaranda in search of her. While lying sleepless in the Vindhya Hills, he overhears the conversation of a couple of birds: "There is, at Pāṭaliputra, a princess named Vāsavadattā, daughter of King Śriṅgāraśekhara. She has seen a youth in a dream and being enamoured of him has sent her confidante Taralikā to find him out." In usual course the lovers meet at Pāṭaliputra, when Vāsavadattā learns that her father has made up his mind to give her in marriage to Pushpaketu—the Vidyādhara chief. Alarmed at this news, the lovers fly on a magic steed to the Vindhya, where they lie asleep. Kandarpaketu wakes up to find Vāsavadattā missing, and wanders madly about searching for her. In despair, he prepares to kill himself, when a voice assures him of his reunion with his beloved. After a few months he sees a stone statue of the form of his wife, which by his touch is brought back to life. Vāsavadattā now relates the story of how she was turned into stone, and the lovers are happily united.

Thus it is evident that the story as given here is different from the one which tells of Vāsavadattā, the daughter of Pradyota and the beloved of Udayana, the king of Vatsas, which has been treated variously by different Sanskrit authors. It, therefore, appears probable that the plot is the product of Subandhu's inventive genius, as may be expected in a *kathā*. The story itself is practically of no importance except as affording the author a scope for displaying his descriptive power. He has left us a perfect specimen of the *Gauḍī* style, which is noted, among other things, for long compounds, frequent use of alliteration and hyperbole. Subandhu takes special pride in having composed a *kāvya* in which there is pun on every syllable (*pratyakshara-ślesha*),[1] and this he has mostly done, but

[1] To which Bāṇa appears to refer by *nirantara-ślesha-ghanāḥ* as one of the characteristic embellishments of a *kathā*. Cf. *Kādambarī*, introductory verse no. 9. It may, however,

at the sacrifice of his sense of moderation. He may be given some credit for a melody in the long compounds and a music in the alliterations. The artificialities of his work are too palpable and require no special notice.

We may next take up for consideration the two most celebrated prose *kāvyas* in Sanskrit, viz. the *Kādambarī* and the *Harsha-charita* of Bāṇa. The former work is a perfect specimen of a *kathā*. The plot, which undoubtedly is *sarasa* (pleasing), with love as the prevailing sentiment, is not in the main an invention of the poet, but is most probably taken from the *Bṛihat-kathā* of Guṇāḍhya. Bāṇa, of course, introduces important changes. The work opens with twenty introductory verses by which Bāṇa pays his respects to Brahmā, Śiva and Vishṇu in his incarnation as Vāmana (the dwarf), as well as to his *guru*, deprecates the wicked and praises the good, remarks on the characteristics of an ideal *kathā-kāvya*, and gives a brief account of his ancestors and himself. The beginning of the story shows us King Śūdraka of Vidiśā, to whom a parrot which can speak in human voice is given by a Chaṇḍāla maiden of exquisite beauty. The bird first tells of its own past—how it was reared by its old father, who was cruelly killed by a hunter, after which it was brought to the sage Jābāli. He told his disciples a long story in which the bird also figured; this story the bird now narrates verbatim to Śūdraka. The main story now begins with Tārāpīḍa, King of Ujjayinī, who has Vilāsavatī as his wife and Śukanāsa as one of his ministers. Through Śiva's grace the king gets a son, Chandrāpīḍa, and on the same day a son, Vaiśampāyana, is born to Śukanāsa. The two boys grow up and are educated together; then they return home. Chandrāpīḍa was given a wonderful horse, Indrāyudha, and a faithful companion, Patralekhā, the daughter of a king taken captive and brought up by Queen Vilāsavatī as her own daughter. On one occasion Śukanāsa imparts wholesome instruction in statecraft as well as against the temptations of youth to Prince Chandrāpīḍa, who now sets out on *digvijaya*. One day, while in pursuit of a Kinnara pair, he is carried far away to the vicinity of the lake Achchhoda. By the side of this lake, in a temple, he finds Mahāśvetā engaged in penance. Humbly asked by the prince, the maiden narrates her sad tale of love and sends him to her friend Kādambarī, a Vidyādhara princess. The two fall in love, but Chandrāpīḍa returns to Ujjayinī at his father's call. Kādambarī now sends Patralekhā (who was left behind by Chandrāpīḍa) to the prince with a message assuring him of her love. Here ends

be argued by those who place Subandhu after Bāṇa that Subandhu here boasts of having succeeded in the very frequent use of *ślesha* where Bāṇa was not so successful.

the work by Bāṇa, but the story is continued and completed by his son Bhūshaṇabhaṭṭa, which seems needless to summarize. At the end Kādambarī is united with Chandrāpīḍa, and Mahāśvetā with her beloved Puṇḍarīka.

According to Bāṇa, a *kathā*, by virtue of the successful delineation of the sentiment of love, with charming conversations and love sports described in it, produces delight heightened by curiosity, and when it is composed of a novel theme (invented by the poet) or displays a harmony of word and meaning, with sparkling figures of speech and thick-set with puns at every step, it can never fail to captivate the attention of the reader. Now, it must be conceded that Bāṇa has remarkably succeeded in producing such a *kathā* in his *Kādambarī*. As with Subandhu, so also with Bāṇa, the interest of the story is a subordinate matter, and a skilful manipulation of the language is the main object. As Rabindranath puts it, the story is only an umbrella-bearer, the language is the king. The simple story has been prolonged to huge proportions mainly by lengthy descriptions. Bāṇa's descriptive power is undeniable—only the descriptions are often overdone, as in the case of the palace of Tārāpīḍa, the temple of Chaṇḍikā, Chandrāpīḍa's start for journey back to Ujjayinī, etc. The cruel killing of birds by the hunter is effectively described. The poet shows a good hand at characterization. Even the minor characters, not to speak of the principal ones, are extremely lifelike (cf. the Chaṇḍāla girl, Śukanāsa, Tārāpīḍa, Hārita and Jābāli). His treatment of youthful and tender love is indeed refined and graceful. With our firm belief in transmigration, we appreciate the fidelity of the love-lorn Mahāśvetā practising penance in a lonely temple by the lake Achchhoda. Bāṇa has artificialities; for example, his constant use in descriptions of figures of speech like the simile with *ślesha*, *virodhābhāsa* and *parisaṁkhyā* is a pedantic display of his power. But it should be remembered that in his age literary taste had declined, so that people found delight in this sort of composition. He has often been censured for the employment of too many unfamiliar allusions. In this connection we may say that we in India find no difficulty in apprehending them, as we constantly hear of such stories from our young age. The blame for his use of long compounds is overrated; the major portion of his work does not contain long compounds, and it is unjust to find fault with the whole work on that account. Moreover, the quality of *ojas* (verve), which consists in the use of long compounds, was considered capable of adding

grandeur to prose composition,[1] which by some Rhetoricians (e.g. Vāmana) is held to be the touchstone for judging the merits of poets. Bāṇa's works may serve as models of the Pāñchālī style, in which word and sense are equally balanced. Of his two works, the place of honour must be given to the *Kādambarī*, in which he displays 'all his wealth of observation, fullness of imagery and keenness of sympathy.'

Bāṇa's *Harsha-charita* conforms admirably to the later characteristics of an *ākhyāyikā* and is practically the only surviving specimen of the class known to us. The literary importance of some of its introductory verses has already been noted. After giving a full account of himself and his ancestors, the author tells how he came to write about the deeds of King Harsha. He then traces the origin of the royal family, and describes King Prabhākaravardhana, the birth of his children, Rājyavardhana, Harshavardhana and Rājyaśrī, and the latter's marriage with Grahavarman, the Maukhari prince. Rājyavardhana sets out for subduing the Hūṇas; Harsha follows him, but lags behind on account of a hunting excursion, from which he has to hasten back home on getting the news of his father's illness. The king dies, and his queen Yaśovatī kills herself on the pyre, Harsha trying in vain to dissuade her. Rājyavardhana returns shortly, but the grief for his parents proving too much for him, he prepares to retire to the forest, entrusting the cares of the kingdom to Harsha. Just then comes the dreadful news that the Mālava king has slain Grahavarman and has imprisoned Rājyaśrī, whereupon Rājyavardhana sets out to take revenge and rescue his sister. Harsha remains in the capital and hears in a few days that his elder brother succeeded in defeating the Mālava king easily, but he himself has been treacherously murdered by a Gauḍa king. Harsha checks his impulse to march immediately against the miscreant through the wise counsel of the old minister Siṁhanāda. The march of Harsha's large army is vividly described, as also his alliance with the king of Prāgjyotisha, whose ambassador presents him a wonderful umbrella. Harsha reaches the Vindhya Hills, where a young mountaineer promises to help him in finding out Rājyaśrī, who has escaped from the prison. Harsha is then taken to Divākaramitra, a venerable Buddhist ascetic, who receives the king cordially. At this time news reaches the sage that a lady is going to burn herself, whereupon Harsha rushes to the place and finds that it is Rājyaśrī. She is stayed from her resolve by the words of the king and

[1] *Kāvyādarśa* I. 80.

the ascetic. Harsha returns to the camp with his sister; it is nightfall. With this the book ends abruptly.

As a literary composition the *Harsha-charita* is much inferior to the author's *Kādambarī*. Keith calls it a historical *kāvya*. It is undoubtedly a *kāvya*, and although it gives some account of the incidents of Harsha's early reign, its historical value is almost entirely lost in poetic exaggeration and description, although magnificent. The work, however, gives some useful information on the condition of Indian society in Bāṇa's days. He has described the last moments of Prabhākaravardhana with vigour and pathos. The speech of queen Yaśovatī before she mounts the pyre to kill herself has been equalled in the sincerity of its feelings and spirited eloquence only once in the entire range of Sanskrit *kāvya* literature, viz. by that of Draupadī in the *Kirātārjunīya*. The admonition of Siṁhanāda in chapter VI reminds one of Śukanāsa of the author's *Kādambarī*—although the two are different, being in different contexts. The speeches of Harsha throughout the work reveal indeed a great monarch—undaunted and adventurous, dutiful and affectionate. We cannot forget Rājyavardhana—a devoted son, affectionate brother and, above all, a heroic fighter. In other points, the *Harsha-charita* shares more or less the merits and defects of the *Kādambarī*. As long as Sanskrit literature exists, Bāṇa will always be remembered as a great writer of Sanskrit prose.

III. THE PERIOD OF GRADUAL DECLINE

The history of *kāvya* literature after Bāṇabhaṭṭa is one of gradual decline both in literary taste and in form. Bāṇa's works, indeed, constitute a landmark in the literary history of Sanskrit. He himself shows enough of artificiality, in which his successors far surpass him.

We may begin with the *Rāvaṇa-vadha* (usually called *Bhaṭṭi Kāvya*) written by Bhaṭṭi about the middle of the seventh century. The work, however, is not merely a *kāvya*, but illustrates the rules of Pāṇini's grammar also, which (latter) appears to be the author's main object. It tells in twenty-two cantos the story of the *Rāmāyaṇa*—Rama's life-history forming the main theme. The author was thoroughly acquainted with the science of Poetics of his day, as he illustrates figures of speech (canto X), poetic quality (canto XI), lifelike description (canto XII) and forms identical in more than one language (canto XIII, which may be read both as Sanskrit and as Prakrit). Bhaṭṭi is often accused of mere pedantry; but allowing some concession for the peculiar nature of his

work we may say that he is not lacking in genuine poetic merit. To us it seems that his work was mainly intended for those who were studying grammar, so that they might remember the actual forms here given in verse and at the same time derive the pleasure of reading a story. The power he has exhibited in the execution of his task is really commendable. We cannot say definitely if he is to be identified with Bhartṛhari, the author of the *Vākyapadīya*, a wonderful treatise on the philosophy of speech, but for a grammarian to write on that subject has every possibility about it. To another Bhartṛhari we owe the three famous *Śatakas*—*Śriṅgāra-śataka* (century of love), *Nīti-śataka* (century of wise policy) and *Vairāgya-śataka* (century of resignation). We have it on I-tsing's authority that the author wavered several times between the charms of peaceful monastic life and those of worldly enjoyment. About the *śataka* type of poems generally it may have been a fact, as Keith suggests, that the earliest ones were made up of verses not composed by the man with whose name these are associated, but were mostly the productions of others and on account of their beauty were only collected together by him.

The next *kāvya*-writer of some repute is Kumāradāsa (about the end of the seventh century), author of the *Jānaki-haraṇa*, which in twenty-five cantos (of which fifteen only are now left—the last, again, being fragmentary) treats of the Rāma story. His is a laboured production and betrays an extreme fondness for alliteration. He has not much of originality, but his descriptions are, on the whole, fair. He was greatly influenced by Kālidāsa.

Bhaumaka's *Rāvaṇārjunīya*, through *double entendre* (*ślesha*), describes the story of Rāvaṇa of the *Rāmāyaṇa* and of Arjuna of the *Mahābhārata* by the same verses and also illustrates the rules of grammar, thus showing clearly the influence of Bhaṭṭi.

Now we turn to the author of the *Śiśupāla-vadha* (about the middle of the eighth century), whose name Māgha, the Pundits have a tradition, is only a pseudonym. His aim was to surpass (as a writer of a *mahā-kāvya*) Bhāravi, whose *Kirātārjunīya* he closely followed. As the heat of the sun's rays is felt less in Māgha (January-February), so the author of the *Śiśupāla-vadha* believed that the poetic beauty of his *kāvya* would eclipse the fame of Bhāravi (*bhā*—lustre, *ravi*—the sun). He, therefore, assumed that name. If that be a fact, we cannot say what his name really was. Whatever may be the value of the tradition, there can be little doubt that such indeed was Māgha's ambition. We shall now

compare the *Śiśupāla-vadha* with the *Kirātārjunīya* in regard to the manner of execution of the plot in the two. As we do this we shall get an idea of the contents of the epic under review. Both open with the word *śriyaḥ*. In canto I of the former the spy reports of the deeds of Duryodhana, the enemy of the Pāṇḍavas; in the latter Nārada recounts the misdeeds of Śiśupāla, an avowed enemy of gods and of Kṛishṇa himself. In the *Kirātārjunīya* a discussion between Draupadī, Bhīma and Yudhishṭhira as to the proper course of action to adopt follows; in the *Śiśupāla-vadha* there is a similar discussion between Balarāma, Uddhava and Kṛishṇa. In the former Vyāsa advises the Pāṇḍavas what they should do to win the battle; in the latter Nārada does a similar thing, although it is in canto I. In the former Arjuna repairs to Mt. Indrakīla for penances; in the latter Kṛishṇa halts near Mt. Raivataka. In the *Kirātārjunīya* the Himālaya is described in verses with the figure *yamaka*; in the *Śiśupala-vadha* exactly the same is done for describing Raivataka. Both describe the various sports of the Apsarases. In the former the Kirāta sends an ambassador seemingly to rebuke (but really to rouse the heroic spirit) of Arjuna; in the latter, Śiśupāla does the same thing by vilifying Kṛishṇa. In the *Kirātārjunīya* (canto XV) the battle is described in stanzas some of which have only one consonant with different vowels repeated and some two, while some have the same sound and sense read forwards and backwards; in the *Śiśupāla-vadha* (canto XIX) the battle is described exactly with similar tricks. In the former the last verse of every one of the cantos contains the word *lakshmī*; in the latter there is *śrī*, which is a synonym for it. Lastly, both are based on the *Mahābhārata*.[1]

The above comparison more than confirms the view that Māgha had the *Kirātārjunīya* as his ideal, and we should say he has followed it too closely to claim any originality, at least so far as the execution of the plot is concerned. Indian critics have in almost one voice bestowed high praise on Māgha, which, however, does not seem fully justifiable. In his ambition to vie with Bhāravi he has much overdone his part. His poem is mainly a play upon language; his descriptions are often tiresome; his verbal juggleries in canto XIX are almost nauseating; he sometimes uses 'lexicon words' as we call them, which stand in the way of the reader's quick grasp of sense; sometimes he composes stanzas merely to exhibit

[1] We wonder why Māgha did not name his epic *Kṛishṇa-Śiśupāliyam*: maybe because the *dénouement* of the two books was of a different nature and the names of so many *vadha-kāvyas* were in his mind.

his cleverness in employing similes involving grammatical points or in using a particular word, phrase or form. But these and other demerits should not blind us to deny him the credit which is his due. In the first place, we would like to observe that Māgha is at his best in his devotion to Kṛishṇa. Thus Nārada in canto I, the ladies of Dwārakā in canto III and Bhīshma and Yudhishṭhira in canto XIV all speak with force and sincerity of sentiment. We are led to believe that most probably Māgha was himself a devotee of Kṛishṇa, and that is at least one of the reasons why the ambassador of Śiśupāla vilifies Kṛishṇa in stanzas with *double entendre*, so that in one case he eulogizes him. Māgha cannot speak ill of Kṛishṇa, but he has to introduce that scene in obedience to his ideal *Kirātārjunīya* and also because the occasion almost requires it. He has effectively blended the emotion of love with war, in which characteristic he reminds us of Bhavabhūti. Māgha's wealth of expression, richness of imagination, sweetness of the many verses with an erotic tone and, above all, his devotional stanzas justify to a great extent the high esteem in which he has been held in India.

Amaru (not later than 800 A.D.) richly deserves the popularity he has won by his superb *Śataka*, which so skilfully depicts the sentiment of love in its different phases and the relation between lovers. His verses are real lyrical gems in their originality as well as in compactness of composition. He is brief and lucid, elegant and precise.

We may easily pass over the biggest *mahākāvya* ever written in Sanskrit, the *Hara-vijaya*, in fifty cantos, by a Kashmirian poet, Rājānaka Ratnākara Vāgīśvara (about 850 A.D.). The plot centres round the trifling episode of the slaying of the demon Andhaka by Śiva. It only shows how far one's lack of taste and judgement can go.

The *Kapphaṇābhyudaya*, an epic poem in twenty cantos, was written in the manner of Māgha about the end of the ninth century by the Kashmirian court-poet Śivasvāmin, a Buddhist. The book is based on a legend of the *Avadāna-śataka* which narrates how a king of the Deccan who once oppressed the lord of Śrāvastī was afterwards converted to Buddhism.

Trivikrama Bhaṭṭa, a mediocre poet, wrote the *Damayantī-kathā* and the *Madālasā-champū* at the beginning of the tenth century. The former is written in the manner of Bāṇa, of whose merits it possesses none, but shares all his defects in a far greater measure.

To the middle of the tenth century belongs the *Yaśastilaka* of Somadeva, a Jaina monk. The story has a missionary purpose of teaching

ahiṁsā (abstention from killing) as the means of putting a stop to rebirth. The romance, although divided into chapters styled *āśvāsas*, is otherwise of the *kathā* type. It acknowledges the influence of Bāṇa and clearly betrays that of the *Bṛihat-kathā* as well.

Mention should also be made of the *Kichaka-vadha*[1] of Nītivarman, a quotation from which is found in the *Bhāshā-vṛitti* (on Pāṇini's rules, omitting Vedic ones) of Purushottamadeva (one of the court-poets of Lakshmaṇasena). The book, in four cantos, describes, in stanzas with *ślesha* and *yamaka*, Bhīma's slaying of Kichaka who offended Draupadī.

Halāyudha in his *Kavi-rahasya* (tenth century), attempts, after Bhaṭṭi, to illustrate the rules of verbal formation. It is devoid of any literary merits.

The *Śrikaṇṭha-charita* of Maṅkha, written about 1135-45 A.D., describes in twenty-five cantos the destruction of the demon Tripura by Śiva. The book is as dreary and uninteresting as the *Hara-vijaya* noticed above. It does, however, give a full account of its author.

About the same time, or perhaps somewhat earlier, falls the *Rāghava-pāṇḍavīya* of Kavirāja, which enjoys some reputation not so much for its poetic merits as for the power of the author to tell the tales of Rāma and the Pāṇḍavas by the same verses, of course with the help of *double entendre*. Kavirāja boasts of his own power of *vakrokti*, which distinction he claims with only two other writers of Sanskrit, viz. Subandhu and the famous Bāṇa. The poet gives unmistakable proof of his abilities, which, however, he has misused.

About the end of the tenth or the beginning of the eleventh century was written the *Navasāhasāṅka-charita* by Padmagupta or Parimala, whose aim was to give us a *kāvya* (in eighteen cantos) in which he alluded to the history of King Sindhurāja Navasāhasāṅka of Mālava, at whose direction the work was undertaken. Its *kāvya* interest centres round the story of the winning of the princess Śaśiprabhā. The historical value of the work is not serious, nor has it much of poetical merit.

Bilhaṇa's *Vikramāṅkadeva-charita*, written in the last quarter of the eleventh century, proposes to describe the reign of Chālukya Vikramāditya VI of Kalyāṇa. As a history, the work shows the same defects as those of Bāṇa's *Harsha-charita*: it exaggerates the good deeds of the hero, but takes care to omit those that are not savoury. The concluding canto is interesting in this that it gives a full account of the author and

[1] Edited with introduction, commentary and notes by Dr. S. K. De in the Oriental Text Publication Series of the University of Dacca.

his family and describes experiences of the poet similar to those of Bāṇa as given in the first two chapters of the *Harsha-charita*. Bilhaṇa deserves some credit as a poet, especially for his descriptive powers. The author has two other works to his credit—the *Chaura-pañchāśikā* (a lyric) and the *Karṇa-sundarī* (a play).

The greatest writer of history in Sanskrit is the Kashmirian Kalhaṇa, the author of the famous *Rāja-taraṅgiṇī*, who wrote in the middle of the twelfth century. He was a Brāhmin, but had respect for Buddhism. In his opinion, only a poet has the power of playing the part of a historian, because he alone can represent facts in their true colour. The picture that Kalhaṇa draws of Kashmir of his days is rather sad, and throughout his work he strikes a note of the vanity of human desires. Kalhaṇa is pre-eminently a poet and not a sober historian—he is only a chronicler. To achieve his poetic end he uses to his advantage all that our Poetics can supply. He has a wonderful command over the vocabulary and can use the rhetorical figures just as he chooses. His descriptions also are often vivid and give undoubted evidence of his poetic powers.

We may here mention the *Dvyāśraya-kāvya* of Hemchandra (1088-1172 A.D.), a Jaina monk. The work, in twenty cantos in Sanskrit and eight cantos in Prakrit, illustrates the rules of his own grammar (*Siddha-hemachandra*, in eight chapters, of which the first seven teach Sanskrit and the last Prakrit), and at the same time describes the life and deeds of his patron Kumārapāla of Aṇhilvād and his predecessors. Hemachandra, however, gives us little to be of value either as history or as *kāvya*.

Śrīharsha, the celebrated author of the *Naishadhīya* or the *Naishadha-charita*, we read in the colophon, was honoured by the kings of Kanauj, who have been identified with Vijayachandra and Jayachandra (second half of the twelfth century). His father's name was Hīra—a jewel among poets, and his mother was Māmalladevī. In some of the concluding verses of the various cantos of his famous *mahākāvya* he mentions the names of his previous works, of which the *Khaṇḍana-khaṇḍa-khādya*, a philosophical treatise, is the most well-known for its abstruseness and scholarship. The *Naishadhīya*, based on the Vanaparvan of the *Mahābhārata*, describes in twenty-two cantos the well-known story of Nala and Damayantī. The story is so charming, being at once romantic and pathetic, that it has been the subject matter of poetic treatment by several others. Of these the *Nalodaya*, generally ascribed to Kālidāsa, but certainly a later and inferior work, the *Nalachampū* of Vikramabhaṭṭa already noticed and the *Sahṛidayānanda* of Kṛishṇānanda (a fairly good

work and quoted in the *Sāhitya-darpaṇa*) are the more important. Śrīharsha gives the story up to the return of Nala to his capital with his newly wedded bride, and the work ends with a description of the pleasures of their married life. The incident is too tiny to form the theme of a *mahākāvya*, but Śrīharsha fills the greater part of his poem with descriptions, sometimes wearisome and uninteresting, no doubt, but on the whole fair. The poem exhibits a complicated state of society and manners in the days of the author. The love painted by Śrīharsha is sensual, while in the *Mahābhārata* it is noble and sacred. There is an anecdote to the effect that when Śrīharsha completed his *Naishadhīya*, he showed it in great glee to his maternal uncle Mammaṭa, the famous author of the *Kāvya-prakāśa*, who, after going through it, is said to have remarked that had Śrīharsha shown him this work some time before, he could have saved himself the trouble of hunting out, from the existing literature, instances of the various 'demerits' for his treatise (chapter VII). This is indeed an exaggeration, but at the same time it is true that Śrīharsha's is not an ideal *mahākāvya*. He is lacking in the sharpness of characterization as also in plot-manipulation: Nala is not the chivalrous hero of the *Mahābhārata*, but an effeminate person who revels more in the pleasure-garden. The artificiality of the book is often painful. That poetry in the hands of poets like him was only an excuse for playing upon language—mainly because of their lack of original ideas—is shown clearly by these poets expressing the same idea in different words in two consecutive verses. The very first two verses of the *Naishadhīya* are illustrations in point. The second verse adds nothing to what is expressed in the first. The long compound which constitutes the last two lines of it should also be noticed. This occurs at many places in the poem, making it difficult to comprehend the sense, and thus one marks the absence of lucidity. Śrīharsha is at places definitely obscene. In spite of these and other blemishes, the *Naishadhīya* is indeed one of the *mahākāvyas par excellence*. The structure is epic-like; the language is never commonplace and generally has a dignity: *śiesha* or *double entendre* is employed, but always with moderation, and often the general effect is heightened by the contrast of the open and covert meanings. Particularly striking is the speech of Sarasvatī through the lips of Damayantī's companion, which describes in one meaning the character and qualities of Nala himself, while in another the particular god now in Nala's form. Among the best portions of the poem may be named the whole of canto IX, which has the conversation between Nala as the messenger of the gods and Damayantī and also

canto III, where the golden swan appears as a matchmaker and wins the heroine's consent to her marriage with Nala. If Māgha was at his best in treating of devotion, Śrīharsha is at his best in dealing with negotiations. Indian estimation gives special credit to Śrīharsha for his melodious matching of sound and sense in the *Naishadhīya*.

After Śrīharsha there is hardly any great writer of the *mahākāvya* worth the name. We may just mention the *Pāṇḍava-charita* and the *Mṛigavatī-charita* of Devaprabha Sūri of the thirteenth century, the *Mahīpāla-charita* of Charitrasundara Gaṇin and the *Padya-chūḍāmaṇi* of uncertain date but ascribed to a Buddhaghoshāchārya. The poetic merit of these works is not very great. The *kāvya* literature after this period comprises mostly the so-called lyrics, *śatakas*, *stotras* (hymns) and anthologies. Some works of these types have already been noticed. Strictly speaking, a connected lyric delineating a single emotion all through is rare in Sanskrit, but we have lyrical gems in the *Sattasai*[1] (usually known by the Sanskrit form *Saptaśatī*) of Hāla, whose date is uncertain but is probably to be placed before Kālidāsa. This is a wonderful collection of seven hundred verses in Prakrit (some of which are perhaps written by Hāla himself) of an almost purely erotic character. These stanzas portray the ways of love and lovers in a peculiarly charming way. Of Sanskrit poets, only Amaru of the *Śataka* (already noted) very nearly approaches Hāla. The superb beauty and popularity of the *Sattasai* inspired at least two Sanskrit poets to make a similar attempt: We find, in the first place, Govardhana, one of the court poets of Lakshmaṇasena of Bengal (middle of the twelfth century), not collecting, but himself composing seven hundred stanzas in Sanskrit, mostly erotic in theme, entitled the *Āryā-saptaśatī*. Here the verses are arranged in an alphabetical order without any regard to their inner connection. The other not very well-known imitator of Hāla is Paramānanda who in his *Śṛiṅgāra-saptaśatikā* makes a similar attempt without much success. Mention may be made of the *Ghaṭakarpara* by an author of the same name, in twenty-two stanzas full of *yamaka* (assonance), to which the little reputation it has is mainly due, and of the *Śṛiṅgāra-tilaka*, attributed (not definitely) to Kālidāsa, which in twenty-three verses treats of love drawing the analogy of the chase. The *Chaṇḍī-śataka* of Bāṇa and the *Sūrya-śataka* of his father-in-law Mayūra are religious in tone. The *Moha-mudgara*, attrib-

[1] No account of Prakrit literature has been given here, but reference has already been made to the *Setubandha* (or *Dasamuha-vaha*) which passes under the name of Pravarasena (and was once—though wrongly—ascribed to Kālidāsa) and the *Gauḍa-vaha* of Vākpatirāja, written early in the eighth century.

uted to the great Śaṅkarāchārya, and the *Sānti-śataka* of Śilhaṇa tend to teach resignation by presenting the hollowness of worldly enjoyment. We may afford to pass over what may be called the *stotra* literature, as it is entirely sectarian in character, although occasionally not without some poetic merit. The *Vakrokti-pañchāśikā*, which is usually included under this class, is probably to be taken as a poem with erotic motif. Just a reference may be made to the *Pavanadūta*, written on the model of the *Meghadūta*, by Dhoyi, one of the court-poets of Lakshmaṇasena. The poem merits some literary credit.

Of all the poets who formed the *Pañcharatna-sabhā*[1] of Lakshmaṇasena, the brightest jewel undoubtedly is Jayadeva, whose *Gīta-govinda* has justly earned the reputation it enjoys. By virtue of its exquisite beauty of thought, language, style and treatment, it occupies a unique position in Sanskrit literature. The poet-devotee speaks his heart out in a language which is inimitable, untranslatable. Jayadeva belongs to the middle of the twelfth century, when Bengali was in the second stage of its development. The immortal poet has used words which even the man in the street understands, for they are as much chaste Bengali as Sanskrit, the difference being negligible. And in melody and rhythm he is incomparable. The *Gīta-govinda* forms a class by itself: Simply *kāvya* does not connote what it really is; a drama it does not profess to be: a lyric it is no doubt, but that is not all. It is based on the popular theme of love between Kṛishṇa and Rādhā. Kṛishṇa is estranged from Rādhā, and to test her love he sports with other young maidens. Rādhā naturally becomes jealous, but expects he would come back to her. Kṛishṇa, however, does not return so soon. Rādhā is disappointed and feels the pangs of separation. At the end Kṛishṇa returns to her, and their happy reunion follows. Jayadeva's work is a perfect production of art which leaves nothing to be desired. It is the outcome of his inmost heart. The poet sings because he must.

Before concluding we should just mention the more important of the anthologies in Sanskrit. From them we at least get some specimen of the works of a large number of Sanskrit poets. The oldest of these anthologies extant is the *Kavīndra-vachana-samuchchaya*, perhaps to be dated about the middle of the eleventh century. Then we have the *Saduktikarṇāmṛita* or *Sūkti-karṇāmṛita* of Śrīdharadāsa (of 1205 A.D.), the *Subhāshita-muktāvali* of Jalhaṇa (about 1247 A.D.), the *Śārṅgadhara-paddhati* of Śārṅgadhara (1363 A.D.), the *Subhāshitāvali* of Vallabhadeva

[1] Literally, 'council of five jewels.'

(perhaps fifteenth century), another of the same name by Śrīvara (fifteenth century), and lastly, the *Padyāvalī*[1] of Rūpagosvāmin (fifteenth century). There are some more, but those mentioned are the more important.

It would, indeed, be a mistake to suppose that the history of Sanskrit *kāvya* literature closes with the fifteenth century A.D. Works in *kāvya* style, some *mahākāvyas*, some lyrical poems and some dramas or rather dramatic poems continued to be produced. Even last year we got a *nāṭaka*. But no notice is taken of these, as most of them at their best are but imperfect imitations of older productions, rarely with any beauty of expression or a true poetic touch. In fact, the really creative period of Sanskrit literature almost closes with the eighth century. From this time onward we find Indian intellect busy in defining, dividing and subdividing what was already there, and it is only casually that we come across works which may be regarded as products of art—leaving aside perfection. Even capable minds became pedantic and revelled more in the hair-splitting niceties of philosophy, so that we do meet with giant minds like Jagannātha, but very rarely a poet in the true sense of the term.

In conclusion it may be observed that Sanskrit *kāvya* literature shows a remarkable continuity in the development of all the branches which are included under the term 'literature.' If there are a few gaps here and there, it must not be supposed that there was ever any period of suspension of literary activity; rather these should be accounted for by the fact that the works produced during such periods have not been preserved to us. In taking this view we are supported by the evidence given by the anthologies to which attention has already been drawn. They show that at least some of the works that are lost to us were of no mean merit. The Sanskrit *kāvya* literature unfolds the gradual development (as well as decay) of the mental activity of a people covering a period of no less than 2,500 years—and in this we leave out of consideration the vast literature of the Vedas, which would carry us at least another 1500 years back. If the literature of a nation reflects its culture, Sanskrit literature reflects one of which we may justly be proud. The instrinsic merit of this literature has won almost unqualified admiration from all quarters; the part played by Sanskrit Fable literature in the development of that branch of literature all over the world is by no means insignificant; its gnomic poetry still stands unrivalled; in lyric and

[1] An excellent edition of this work with an exhaustive introduction, text (with variants), full notes on the authors of the verses and several appendices by Dr. S. K. De has been published by the University of Dacca.

drama it has produced works which can stand comparison with the best productions in those branches of any literature in the world; and if all our *kāvyas* or court-epics have not been able to win the same unstinted praise of Western critics, it is at least partly explained by the peculiar character of Sanskrit *kāvyas*. These are often accused of 'artificiality': in this connection, however, one must not forget that a Sanskrit *kāvya* is a *kāvya*—we can almost say—because of this artificiality. We would be far from the truth if we were to suppose that the *Alaṁkāra-śāstra* prescribed the stereotyped commonplaces which led to this artificiality. It only generalized on the characteristics of a *kāvya* as they were noticed in the works of great poets, who were always able to rise above the fixed canons and produce works which were finished things of art. If in the hands of poets of lesser abilities the artificiality was exaggerated, it was no fault of the *śāstra*, and in fact it came in quite contrary to the expectation of the theorists. If in a *kāvya* there is too much of exaggeration, which stands in the way of its aesthetic enjoyment, it is unquestionably a defect and is recognized as such by our theorists as well. The end of poetry as understood in India is to suggest *rasa*—a peculiar condition of aesthetic enjoyment, and in doing this a poet must be unfettered; and if his production is real poetry, it must at the same time remain within the bounds of propriety. Thus the precepts of the *śāstra* were not meant to be fetters but ornaments. A work of art has not to obey any rules; rather the rules follow it. Sanskrit *kāvya* literature has produced many such works, and let us sing the glory of the poet's speech in the words of a celebrated writer on Poetics—

"All triumphant is the poet's speech, comprehending as it does a creation which is not fettered by the restraints of Nature's laws, full of pleasure alone, independent of everything else and charming with ninefold (or ever-new) *rasa*."[1]

[1] In these pages an attempt has been made to give only a general account of Sanskrit *kāvya* literature, and any discussion of disputable points has almost carefully been avoided. Works of many scholars of repute have been freely utilized, special acknowledgment of indebtedness being due to the writings of Professor A. B. Keith and of Dr. S. K. De.

THE SANSKRIT DRAMA

Ever since Sir William Jones, by his translation of the *Śakuntalā* in 1789, introduced Sanskrit poetry to the West and revived a critical interest and study of Sanskrit literature, the labours of Sanskritists have gradually made available most of the important works of the Sanskrit drama, which can now be legitimately regarded as one of the most interesting products of the Indian mind and as one of its best national heritages.

The number of Sanskrit plays which have been printed or still exist in manuscript exceeds six hundred; but most of these are late, inferior and imitative productions belonging to comparatively recent times. The extant masterpieces of the Sanskrit drama belong to the most flourishing period of Sanskrit literature, which is usually given as extending roughly from the fourth to the twelfth century of the Christian era. Recent researches have, however, shown that the extant literature does not probably give a proper indication of its high antiquity. Kālidāsa himself records the names of some of his far-famed predecessors, while dramatic fragments, belonging to the early Kushāṇa period, have been discovered in Central Asia. One of these fragments is actually the work of Aśvaghosha, whom the Buddhist tradition places as the court-poet of Kanishka. The evidence, though meagre, is extremely important, for it reveals the drama at its first appearance in a relatively perfected form and indicates that it must have had a history behind it. This history, unfortunately, cannot be definitely traced to-day, for the earlier specimens which might have enabled us to do so appear to have perished in course of time. The orthodox account of the origin of the Sanskrit drama, by describing it as a gift from heaven in the form of a developed art invented by the divine sage Bharata, envelops it in an impenetrable mist of myth; while modern scholarship, professing to find the earliest manifestations of the dramatic idea in the dialogue-hymns of the *Ṛig-Veda*, and presupposing a development of the dramatic from the religious after the manner of the Greek drama, shrouds its origin in a still greater mist of speculation. The various modern theories, again, of the original 'shadow-play' or 'puppet-play' do not bear critical examination in the light of historical facts. The lack of exact data still precludes us from a dogmatic conclusion.

Nevertheless, references in early literature indicate that a drama of some kind probably existed at least as early as the fourth century B.C., although there is nothing extant which bears the same relation to the classical drama as the early epics do to the later classical epics.

There cannot be any doubt, however, that the Sanskrit drama, neither in its origin nor in its development, received the necessary impetus from the contact of Greece with India. Even if certain striking parallels and coincidences may be admitted between the Greek and the Sanskrit drama, the search for positive signs of influence has only produced a negative result. There are so many fundamental differences that borrowing or influence is out of the question, and the affinities should be regarded as independent developments. The Sanskrit drama is essentially of the romantic rather than of the classical type, and affords greater points of resemblance to the Elizabethan than to the Greek drama. The unities of time and place are entirely disregarded between the acts as well as within the act. Even twelve years elapse between one act and another, and the time-limit of an act often exceeds twenty-four hours; while the scene easily shifts from earth to heaven. Romantic and fabulous elements are freely introduced; tragi-comedy or melodrama is not infrequent; verse is regularly mixed with prose; puns and verbal cleverness are often favoured. There is no chorus, but there is a metrical benediction and a prologue, which are, however, integral parts of the play and set the plot in motion. While the parallel of the *vidūshaka* is found in the Elizabethan Fool, certain dramatic devices, such as the introduction of a play within a play and the use of a token of recognition, are common. There is no limit in the Sanskrit drama to the number of characters, who may be either divine, semi-divine or human. The plot may be taken from legend or from history, but it may also be drawn from contemporary life and manners. With very rare exceptions the main interest almost invariably centres in a love-story, love being the only passion which forms the dominant theme of this romantic drama. Special structures of a square, rectangular or triangular shape for the presentation of plays are described in the *Nāṭya-śāstra*, but they have little resemblance to the Greek or modern theatre and must have been evolved independently. Very often plays appear to have been enacted in the music-hall of the royal palace, and there were probably no special contrivances, elaborate stage-properties or even scenery in the ordinary sense of the word. The lack of these theatrical makeshifts was supplied by the imagination of the audience, which was

aided by a profusion of verses describing the imaginary surroundings, by mimetic action and by an elaborate system of gestures possessing a conventional significance.

Besides these more or less formal requirements, there are some important features which fundamentally distinguish the Sanskrit drama from all other dramas. The aim of the Sanskrit dramatists, who were mostly idealists in outlook and indifferent to mere facts or incidents, was not to mirror life by a direct portrayal of action or character, but to evoke a particular sentiment (*rasa*) in the mind of the audience, be it amatory, heroic or quietistic. As this is regarded, both in theory and practice, to be the sole object of the dramatic art, everything else is subordinated to this end. The plot, as well as characterization, is a secondary element; its complications are to be avoided so that it may not divert the mind from the appreciation of the sentiment to other interests. A well-known theme, towards which the reader's mind would of itself be inclined, was normally preferred; the poet's skill was concerned entirely with the developing of its emotional possibilities. The criticism, therefore, that the Sanskrit dramatist shows little fertility in the invention of plots may be just, but it fails to take into account this peculiar object of the Sanskrit drama.

Thus, the Sanskrit drama came to possess an atmosphere of sentiment and poetry, which was conducive to idealistic creation at the expense of action and characterization, but which in the lesser dramatists overshadowed all that was dramatic in it. The analogy is to be found in the Indian painting and sculpture, which avoid the crude realism of bones and muscles and concentrate exclusively on spiritual expression, but which often degenerate into specimens of formless fantastic creation. This, of course, does not mean that reality was entirely banished; but the sentimental and poetic envelopment certainly retarded the growth of the purely dramatic elements. It is for this reason that sentimental verses, couched in a great variety of lyrical measures and often strangely undramatic, preponderate and form the more essential part of the drama, the prose merely acting as a connecting link, as a mode of communicating facts, or as a means of carrying forward the story. The dialogue was, therefore, more or less neglected in favour of the lyrical stanza, to which its very flatness afforded an effective contrast. It also follows from this sentimental and romantic bias that typical characters were generally preferred to individual figures. This does not mean that the ideal heroic characters were all represented as devoid of common

humanity. Chārudatta, for instance, is not a mere marvel of eminent virtues, but a perfect man of the world, whose great qualities were softened by an equally great touch of humanity; nor is Dushyanta a merely typical lover prescribed by convention. At the same time, there was a tendency to large generalizations and a reluctance to deviate from the type. It meant an indifference to individuality, and consequently to the realities of characterization, plot and action, as well as a corresponding inclination towards the purely ideal and emotional aspects of the theme. Thus, the Sanskrit drama, as a rule, makes the fullest use of the accessories of the lyric, dance, music, song and mimetic art. As there is, therefore, a fundamental difference in the respective conception of the drama, most of the Sanskrit plays, judged by modern standards, would not at all be regarded as dramas in the strict sense but rather as dramatic poems. In some authors the sense of the dramatic becomes hopelessly lost in their ever increasing striving after the sentimental and the poetic; and they often make the mistake of choosing lyric or epic subjects which were scarcely capable of dramatic treatment. It is not surprising, therefore, that a modern critic should accept only *Mudrā-rākshasa*, in the whole range of Sanskrit dramatic literature, as a drama proper. This is indeed an extreme attitude, for the authors of the *Abhijñāna-śakuntala* or of the *Mṛichchhakaṭika* knew very well that they were composing dramas and not merely a set of elegant poetical passages; but this view brings out very clearly the characteristic aims and limitations of the Sanskrit drama.

As the achievement of concord is a necessary corollary to the ideal character of the drama, nothing is allowed to be represented on the stage which might offend the sensibility of the audience and obstruct the suggestion of the desired sentiment by inauspicious, frivolous or undesirable details. This rule regarding the observance of stage-decencies includes, among other things, the prohibition that death should not be exhibited on the stage. This restriction, as well as the serene and complacent attitude of the Indian mind towards life, makes it difficult for the drama to depict tragedy in its deeper sense or comedy in its higher forms. Pathetic episodes, dangers and difficulties may contribute to the unfolding of the plot with a view to the evoking of the underlying sentiment, but the final result should not be discord. The poetic justice of the European drama is unknown in the Sanskrit. The dramatic conflict hardly receives a full or logical scope; and all should end well by the achievement of perfect happiness and union.

There are indeed exceptions to the general rule, for the *Ūrubhaṅga* has a tragic ending. There are also instances where the rule is obeyed in the letter but not in spirit, for Vasantasenā's apparent murder in the *Mṛichchhakaṭika* occurs on the stage, and the dead person is restored to life on the stage in the *Nāgānanda*. Nevertheless, the injunction makes Bhavabhūti alter the tragic ending of the *Rāmāyaṇa* into one of happy union, while the sublimity of the self-sacrifice of Jimūtavāhana, which suggests real tragedy, ends in a somewhat lame *dénouement* of divine intervention and complete and immediate reward of virtue at the end. In the Western drama death overshadows everything and forms the chief source of poignant tragedy by its uncertainty and hopelessness; the Indian dramatist, no less pessimistic in his belief in the inexorable law of *karma*, does not deny death, but, finding in it a condition of renewal, can hardly regard it in the same tragic light.

It is, however, not correct to say that the Sanskrit drama entirely excludes tragedy. What it really does is that it excludes the direct representing of death as an incident, and insists on a happy ending. It recognizes some form of tragedy in its pathetic sentiment and in the portrayal of separation in love; and the tragic interest strongly dominates some of the great plays. In the *Mṛichchhakaṭika* and the *Abhijñāna-śakuntala*, for instance, the tragedy does not indeed occur at the end, but it occurs in the middle, and in the *Uttara-rāma-charita* where the tragic interest prevails throughout, it occurs in an intensive form at the beginning of the play. The theorists appear to maintain that there is no tragedy in the mere fact of death, which in itself may be a disgusting, terrible or undignified spectacle and thus produce a hiatus in the æsthetic pleasure. Grim realism, in their view, does not exalt but debase the mind, and thereby cause a disturbance of the romantic setting. They hold that tragedy either precedes or follows the fact of death, which need not be visually represented, but the effect of which may be utilized for evoking the pathetic. It appears, therefore, that tragedy was not totally neglected, but that it was often unduly subordinated to the erotic and other sentiments and was thus left comparatively undeveloped. Nevertheless, the very condition of happy ending makes much of the tragedy of the Sanskrit drama look unconvincing. In spite of the unmistakable tone of earnestness, the certainty of reunion necessarily presents the pathos of severance as a temporary and therefore needlessly exaggerated sentimentality.

There were also certain other conditions and circumstances which seriously affected the growth of the Sanskrit drama. From the very beginning the drama appears to have moved in an aristocratic environment, having been fostered by the patronage of the wealthy or in the courts of princes. Even if it did not lack serious interests, the drama naturally reflects the graces as well as the artificialities of courtly life; and its exuberant fancy is quite in keeping with the taste which prevailed in this atmosphere. In course of time the science of poetics and dramaturgy stereotyped this taste into elaborate conventions, and there was a gradual preference of the subtle and the exquisite to the fervid and the spontaneous. The dramatist becomes an impeccable master of his craft, but he seldom transports. The drama gains in refinement and splendour but loses its true accent of passion and freshness; and in the constant striving after sentimental effects nothing remains in the end but finical ingenuity or luxuriance of diction. But it is not court-life alone nor the elegant poetic conventions of the *sahṛidaya* (æsthete) which inspired the drama. The dominant love-motif of the classical drama is also explained by the fact that at its centre stood the *nāgaraka*, the polished man about town, whose recognition was eagerly coveted and whose culture, tastes and habits it naturally reflected. Apart from the picture we get of him in the literature itself, we have a vivid, if somewhat heightened, sketch of an ancient prototype of the *nāgaraka* in the *Kāma-sūtra*, attributed to Vātsyāyana. The pessimism of the Buddhistic ideal had disappeared, having been replaced by more accommodating views about the value of pleasure. Even the Buddhist author of the *Nāgānanda* does not disdain to weave a love-theme into the lofty story of Jimūtavāhana's self-sacrifice; and in his benedictory verse he does not hesitate to represent the Buddha as being rallied upon his hard-heartedness by the ladies of Māra's train. The new sense of life brought in its wake a general demand for polish, culture and luxury. The people could enjoy heartily the good things of this world, while heartily believing in the next. If pleasure with refinement was sought for in life, pleasure with elegance was demanded in art. It is natural, therefore, that the love-theme of this literature seldom transports or moves deeply with its joy or its sorrow; for love is conceived not in its infinite depth or height but in its playful moods of vivid enjoyment, breaking forth into delicate blossoms of fancy. It is true that the love-plots, which predominate in the drama, are not allowed to degenerate into portrayals of the petty domestic difficulties of a polygamic system, but the dramatists often

content themselves with the developing of the pretty erotic possibilities by a stereotyped sentimental scheme of love, jealousy, parting and reunion.

Although the theorists lay down an elaborate classification of the various categories of sentiments, it is yet curious to note that in practice the sentiments that are usually favoured are the heroic and the erotic, with just an occasional suggestion of the marvellous. This accords well with the ideal and romantic character of the drama as well as with the fabulous and supernatural elements which are freely introduced. The comic, under the circumstances, hardly receives a proper treatment. The other sentiments are also suggested, but they hardly become prominent. Even in the heroic or lofty subjects, an erotic underplot is often introduced; and in course of time the erotic overshadowed every other sentiment, and became the exclusive and universally appealing theme. The sciences of poetics and erotics take a delight in minutely analysing the infinite diversities of the amatory condition and in arranging into divisions and subdivisions, according to rank, character, circumstances and the like, all the conceivable types of the hero, the heroine, their assistants and adjuncts, as well as the different shades of their feelings and gestures, which afford ample opportunities to the dramatic poet for utilizing them for their exuberant lyrical stanzas. This technical analysis and the authority of the theorists led to the establishment of fixed rules and rigid conventions resulting in a unique growth of refined artificiality.

There is indeed a great deal of scholastic formalism in the dramatic theory of sentiment, which had a prejudicial effect on the practice of the dramatist. The fixed category of eight or nine sentiments, the subordination to them of a large number of transitory emotions, the classification of determinants and consequents, the various devices to help the movement of the intrigue, the normative fixing of dramatic junctures or stages in accordance with the various emotional states, no doubt, indicate considerable power of empirical analysis and subtlety and properly emphasize the emotional effect of the drama, but, generally speaking, the scholastic pedantry concerns itself more with accidents than with essentials. One remarkable drawback of the theory, which had a practical effect on the development of the drama as drama, lies in the fact that it enforces concentration of the sentiment round the hero or the heroine, and does not permit its division with reference to the rival of the hero, who therefore becomes a far inferior character at every point. The theorists are indeed aware of the value of contrast.

To preserve the usual romantic atmosphere, the ideal heroes are often contrasted with vicious antagonists. But the possibility is not allowed of making an effective dramatic creation of an antagonist (like Rāvaṇa, for instance), who often becomes a mere stupid and boastful villain. The Sanskrit drama is thereby deprived of one of the most important motifs of a real dramatic conflict.

In practice the theory of sentiment confined itself, with a few notable exceptions, to the elaboration of the sentiment of love, which alone came to be the dominant theme of this romantic drama. The exceptions refer to the *Mudrā-rākshasa* of Viśākhadatta, the *Veṇīsaṁhāra* of Bhaṭṭa Nārāyaṇa and the *Nāgānanda* of Śrīharsha. The first of these is a remarkable drama in seven acts, which has only one minor female character and which concerns itself with interests other than love. It is a drama of political intrigue, in which the action never flags, the characters are admirably drawn, and the diction is clear, forcible and direct. It is undoubtedly one of the great Sanskrit plays; but as it does not conform to the normal model, its merits have never been fully appreciated. The same remarks, however, do not apply to the second drama mentioned above, which has a little ineffective love-interest, but which really attempts in six acts to dramatize a well-known epic episode from the *Mahābhārata*. The work is slavishly faithful to dramaturgic rules, but narrative or epic details hamper the action and mar the result of otherwise good characterization. There is enough of fire and energy, horror and pathos, but the diction is laboured and the general effect wholly undramatic. The third five-act drama *Nāgānanda*, which dramatizes the obviously Buddhistic legend of the self-sacrifice of Jimūtavāhana, differs from the ordinary Sanskrit play both in its theme and inspiration. It admits indeed an erotic underplot, which describes the love of the hero for Malayavatī, but it is rather loosely connected with the main theme. The drama freely introduces the supernatural and the marvellous, and concerns itself with the lofty emotions of charity, magnanimity, resolution and sacrifice; but the dramatic conflict is somewhat feebly presented, and neither the action nor the characterization creates effective dramatic interest.

Śrīharsha's two other dramas, the *Ratnāvalī* and the *Priyadarśikā*, effectively but conventionally devised in plot, are elegant little plays dealing with the pretty love-intrigues of royal courts. Each of them is based on one of the numerous amourettes of the gay and courtly lover Udayana, the semi-historical beau ideal of popular tales. The hero is

depicted as a care-free and courteous gentleman with a great capacity for falling in and out of love; while the heroines are rather faintly drawn *ingénues* with nothing but good looks and willingness to be loved by the incorrigible royal lover. But the stock theme of the progress of the love-intrigue and its *dénouement* in the ultimate discovery of the princely status of the lowly maiden has little that is original or absorbing. The same remarks apply more or less to the *Svapna-vāsavadattā* attributed to Bhāsa, which deals in six acts with the same theme, although the motif of the dream in this play is finely conceived, the characters of the two heroines are more successfully discriminated, and the gay old lover of Harsha's dramas is figured as a more serious, if somewhat love-sick and imaginative, lover. Not much advance is noticeable in Kālidāsa's *Mālavikāgnimitra*, a presumably youthful production of the great poet, which deals in five acts with a similar banal theme of courtly love and intrigue; but in this play the passionate impetuosity and jealousy of the discarded Irāvatī are finely set off against the pathetic dignity and magnanimity of the queen Dhāriṇī.

Of the other so-called Bhāsa-dramas the *Pratimā* and the *Abhisheka* give us in seven and six acts respectively a dramatization of the time-worn Rāma-story, just as the five-act *Bāla-charita* is a less extensive but similar attempt applied to the legends of the youthful Kṛishṇa; while the *Avimāraka* in six acts is interesting for its more refreshing plot, based probably on folk-tale, of the love of a plebeian for a princess; but it has a rather flat *dénouement* of a happy marriage and a melodramatic atmosphere in which the hero seeks suicide twice and the heroine once. The *Mahāvīra-charita* of Bhavabhūti, the two Rāma-dramas of Murāri and Jayadeva respectively, and the enormous *Mahānāṭaka* on the same theme, which is anonymous and exists in more than one recension, have some poetic but little dramatic interest. The two South Indian dramas, the *Āścharya-chūḍāmaṇi* of Śaktibhadra and the *Kunda-mālā* of Dhīranāga (or Vīranāga), exhibit no other remarkable peculiarities than the utilizing of the pretty device of a mark of recognition (*abhijñāna*), which is so familiar in the Sanskrit drama. It is also not necessary to linger over the rather insipid plays of Rājaśekhara, which deal with stories from the two great epics, but his *Viddhaśāla-bhañjikā* and Prākṛit *Karpūra-mañjarī*, both of which are light-hearted conventional plays of court-life in four acts, are hardly above the level of Śrīharsha's two plays on the same subject; for Rājaśekhara was more concerned with elegant exercises in versification than with real poetry or dramatic values.

Most of the Rāma-dramas in Sanskrit suffer from the error of choosing an epic theme for the drama and of preferring types for individuals.

More interesting are the *Mālatī-mādhava* of Bhavabhūti and the *Vikramorvaśīya* of Kālidāsa, both of which are indeed immature productions of their respective authors but mark a departure in some respects from the conventional erotic plays mentioned above. The *Mālatī-mādhava*, less poetical of the two plays, has yet an interesting, if somewhat loosely constructed plot, some comic relief and contrasted situations, some touch of the terrible, horrible and supernatural; but there is little individuality either in the hero or the heroine, who are of the conventional type of sentimental lovers. There is, however, a great deal of tenderness and pathos in Bhavabhūti's picture of youthful passion, which reaches its most mature and mellow expression in his *Uttara-rāma-charita*. We turn for once from royal courts to a more plebeian atmosphere; it is the story, in two acts, of the love of Mālatī, daughter of a cabinet minister, and Mādhava, a young student. While much of the talk of love and grief in this drama is unconvincing, Bhavabhūti appears to be far more serious than most light-hearted Sanskrit poets, and the intense poetic quality of his erotic verses relieves their banality. The intensity of undisciplined passion and its poetical possibilities, which Bhavabhūti so forcibly describes, are, however, seen in a more poetical and poignant form in the mad search of Purūravas for Urvaśī in the fourth act of the *Vikramorvaśīya*. It depicts in five acts the romantic story of the love of a mortal for a nymph, of which the earliest version is found in a hymn of eighteen stanzas in the tenth book of the *Ṛig-Veda*. Though melodramatic in places and weak in its *dénouement*, the drama reaches a lyric height in the description of the king's ardent but hopeless distraction. But we have hardly anything else remarkable in the drama but this lyric passion of great intensity, which, however, gives it a unique value.

It has been said by a critic of the Sanskrit drama that Kālidāsa, as well as Bhavabhūti, shows no interest in the great problems of life and destiny. While this criticism may be applied to the dramas mentioned above, in which we have nothing but the isolation of individual passion, it is not true of the respective masterpieces of these great dramatists, in which love is taken as a factor of a larger life and envisaged in its fulness. The *Abhijñāna-śakuntala* of Kālidāsa, which represents the perfection of his art, is not based on the mere banality of a court-intrigue but gives us a picture of love, at first youthful and heedless, but soon

purified by suffering and gaining in depth and beauty by tribulation of spirit. Contrasted with the *Mālatī-mādhava* and *Vikramorvaśīya*, the suffering of the hero and the heroine in this drama is far more human, far more real; for love here is no longer an explosive emotion, ending in madness or in a frame of mind nearly akin to it, but a deep and steadfast enthusiasm, or rather a progressive emotional experience which results in an abiding spiritual sentiment.

The drama opens with a description of the vernal season, made for enjoyment (*upabhoga-kshama*); and even in the hermitage where thoughts of love are out of place, the season extends its witchery and makes the minds of the young hero and heroine turn lightly to such forbidden thoughts. At the outset we find Śakuntalā, an adopted child of nature, in the daily occupation of tending the friendly trees and creepers and watching them grow and bloom, herself a youthful blossom, her mind delicately attuned to the sights and sounds in the midst of which she had grown up since she had been deserted by her *amānushī* (non-human) mother. On this scene appears the more sophisticated royal hero, full of the pride of youth and power but with a noble presence which inspires love and confidence, possessed of scrupulous regard for rectitude but withal susceptible to rash youthful impulses, considerate of others and alive to the dignity and responsibility of his high station but accustomed to every fulfilment of his wishes and extremely self-confident in the promptings of his own heart. He is egoistic enough to believe that everything he wishes must be right because he wishes it, and everything does happen as he wishes it. In his impetuous desire to gain what he wants, he does not even think it necessary to wait for the return of Kaṇva. It was easy for him to carry the young girl off her feet; for though brought up in the peaceful seclusion and stern discipline of a hermitage, she was yet possessed of a natural inward longing for the love and happiness which were due to her youth and beauty. Though fostered by a sage and herself the daughter of an ascetic, she was yet the daughter of a nymph whose intoxicating beauty had once achieved a conquest over the austere and terrible Viśvāmitra. This beauty and this power she had inherited from her mother, as well as an inborn shrewdness and a desire for love; is she not going to make her own conquest over this great king? For such youthful lovers love can never think of the morrow, it can only think of the moment. All was easy at first; the secret union to which they committed themselves obtains the ratification of the foster-father. But soon she realizes the pity of taking

love as an end in itself, of making the moment stand for eternity. The suffering comes as swiftly and unexpectedly as the happiness was headlong and heedless.

To these thoughtless lovers the curse of Durvāsas comes to play the part of a stern but beneficent providence. With high hopes and unaware of the impending catastrophe, she leaves for the house of her king-lover, tenderly taking farewell from her sylvan friends, who seem to be filled with an unconscious anxiety for her; but very soon she finds herself standing utterly humiliated in the eyes of the world. Her grief, remorse and self-pity are aggravated by the accusation of unseemly haste and secrecy from Gautami as well as by the sterner rebuke of Śārṅgarava: "Thus does one's heedlessness lead to disaster!" But the unkindest cut comes from her lover himself, who insultingly refers to instincts of feminine shrewdness, and compares her, without knowing, to the turbid swelling flood which drags others also in its fall. Irony in drama or in life can go no further. But the daughter of a nymph as she was, she had also the spirit of her fierce and austere father, and ultimately emerges triumphant from the ordeal of sorrow. She stands up for her rights, but soon realizes that she has lost all in her gambling for happiness, and a wordy warfare is useless. She could not keep her lover by her youth and beauty alone. She bows to the inevitable; and chastened and transformed by patient suffering, she wins back in the end her husband and her happiness. But the king is as yet oblivious of what is in store for him. Still arrogant, ironical and self-confident, he wonders who the veiled lady might be; her beauty draws him as irresistibly as it once did, and yet his sense of rectitude forbids any improper thought. But his punishment comes in due course; for he was the greater culprit who had dragged the unsophisticated girl from her sylvan surroundings and left her unwittingly in the mire. When the ring of recognition is recovered, he realizes the gravity of his act. Her resigned and reproachful form now haunts him and gives him no peace in the midst of his royal duties; and his utter helplessness in rendering any reparation makes his grief more intense and poignant. The scene now changes from earth to heaven, from the hermitage of Kaṇva and the court of the king to the penance-grove of Mārīcha; love that was of the earth, earthy, changes into love that is spiritual and divine. The strangely estranged pair is again brought together equally strangely, but not until they have passed through the baptism of sorrow and become ready for a perfect reunion of hearts. There is no explanation, no apology, no

recrimination, nor any demand for reparation. Śakuntalā has now learnt in silence the lessons of her suffering; and with his former self-complacency and impetuous desires left behind, the king comes, chastened and subdued, a wiser and sadder man. The young year's blossom now ripens into the mellow fruit of autumnal maturity.

Through the same chastening influence of sorrow, the *Uttara-rāma-charita* of Bhavabhūti idealizes conjugal love in a way which is unparalleled in Sanskrit, or perhaps in any literature. It depicts in seven acts the later history of Rāma; and Bhavabhūti's literary characteristics may be studied to the best advantage in this work, which reaches no higher level as a drama but which undoubtedly ranks high as a dramatic poem. Bhavabhūti derives his main theme from the *Rāmāyaṇa*, but to suit his dramatic purpose he does not hesitate to depart in many points from his authoritative epic original. The conception, for instance, of the picture-gallery scene, derived probably from a hint supplied by Kālidāsa, and of the invisible presence of Sītā in a spirit-form during Rāma's visit to Pañchavaṭī, of Rāma's meeting with Vāsantī and confession, the fight between Lava and Chandraketu, the visit of Vasishṭha and others to Vālmiki's hermitage, and the enactment of a play on Rāma's later history composed by Vālmiki, are skilful details which are invented for the proper development of his dramatic theme, as well as for the suitable expression of his poetic powers. Bhavabhūti's principal problem here is not the creation but the adequate motivation of an already accepted story. While not monotonously adhering to his original, he accepts for his particular dramatic purpose the epic outlines of a half-mythical and half-human legend of bygone days, which had already taken its hold on the popular imagination by its pathos and poetry; but he reshapes it freely with appropriate romantic and poetical situations, which bring out all the ideal and dramatic implications of a well-known story. In taking up the theme of conjugal love as a form of pure, tender and spiritual affection, ripening into an abiding passion, Bhavabhūti must have realized that its beauty and charm can be best brought out by avoiding the uncongenial realism of contemporary life and going back to the poetry and idealism of olden days. It was not his purpose to draw the figures on his canvas on the generous and heroic scale of the epic; but he wanted to add to the ancient tale an intensity of human feeling and a genuine emotional tone which should transform an old-world legend into one of everyday experience, the story of high ideals into one of vivid reality.

Bhavabhūti's Rāma and Sītā are from the beginning man and woman of more strenuous and deeper experience than Dushyanta and his woodland love. In the opening act, which has been praised so often and which strikes the key-note of the drama, the newly crowned king of Ayodhyā, with his beloved spouse and his ever faithful brother, is looking over pictures which recall the dear memory of their past sorrow. This scene, which is made the occasion for the tender and deep attachment of Rāma and Sītā to show itself, also heightens by contrast the grief of separation which immediately follows. There is a fine note of tragic irony not only in Rāma's assurance that such a separation as they had suffered would never happen again, in Lakshmaṇa's inadvertent allusion to the fire-ordeal and Rāma's instant declaration of his disbelief in baseless rumours, but also in Sītā's passionate clinging to the memories of past joy and sorrow on the verge of a still more cruel fate. The blow comes just at a moment when the tired, timid and confiding Sītā falls asleep on the arms of her husband, who is lost in his own thoughts of love. When the cup of happiness, full to the brim, was raised to his lips, it was dashed off from Rāma's hand; and one can understand the sentimental breakdown which immediately follows in the conflict between his love and his stern sense of kingly duty. With the responsibilities of the state newly laid on his shoulders, Rāma is perhaps more self-exacting than is right or just to himself and his beloved; but having abandoned the faithful and dear wife, who was his constant companion ever since childhood, his suffering knows no bounds. Both his royal and personal pride is deeply wounded by the thought that such an unthinkable stain should attach to the purity of his great love and to the purity of the royal name he bears.

The scene of the next two acts is laid in the old familiar scenes of Daṇḍaka and Pañchavaṭī, which Rāma revisits. Ten years have elapsed; his sorrow has mellowed down; but he is still loyal and devoted to the memory of his banished wife. The sorrow, which has become deep-seated, is made alive with the recollection of their early experience of married love in those forests, where even in exile they had been happy. The situation is dramatically heightened by making the pale, sorrowing but resigned Sītā appear in a spirit-form, unseen by mortals, and become an unwilling but happy listener to the confessions which her husband makes unknowingly to Vāsantī of his love and fidelity. Unknown to each other, the reconciliation of hearts is now complete; and with an admirable delicacy of touch the dramatist describes her gradual but

generous surrender to the proof that, though harsh, he deeply loves her and has suffered no less. The *dénouement* of reunion is only a logical development of this scene; and the recognition scene in act IV, in which Bhavabhūti, like Kālidāsa, represents the offspring as the crown of wedded love, forms a natural psychological climax leading to it.

Bhavabhūti praises himself for his "mastery of speech" and claims merit for "felicity and richness of expression as well as depth of meaning"; and the praise that he arrogates to himself is fully deserved. The qualities in which he excels are his power of vivid and often rugged or even grotesque description, the nobility and earnestness of his conception, a genuine emotional tone, and a love for all that is deep and poignant as well as grand and awe-inspiring in life and nature. Contrasted with Kālidāsa, however, he lacks grace and polish and fastidious technical finish; but his tendency was not towards the ornate and the finical but towards the grotesque and the rugged, not towards reserve but towards abandon. This would explain, to a certain extent, why his so-called dramas are in reality dramatic poems, and his plot a string of incidents or pictures without any real unity. Bhavabhūti cannot write in the lighter vein, but takes his subject too seriously; he has no humour, but enough of dramatic irony; he can hardly attain perfect artistic aloofness, but too often merges himself in his subject; he has more feeling than real poetry.

This characteristic will be better understood if we consider for a moment his treatment of pathos, which has been contrasted with that of Kālidāsa. Sir R. G. Bhandarkar has remarked with insight that while Kālidāsa *suggests*, Bhavabhūti *expresses*, and that "the characters of the latter, overcome by force of passion, often weep bitterly, while those of the former simply shed a few tears, if they do so at all." This is nowhere more clear than in the picture of Rāma's suffering on the eve of Sītā's exile, drawn respectively by the two poets. Bhavabhūti's tendency is to elaborate pathetic scenes in the theatrical sense of the word. It is probable that popular taste did not disapprove of such naked wallowing in the pathetic, and very few Sanskrit poets, in accordance with the accepted theory of sentiment, would have resisted the opportunity of indulging in an outpouring of sentimental prose and verse. But even here theory was emphatic that the sentiment should be suggested rather than expressed, and never lent its authority to the fatal practice of wordy exaggeration or over-emphasis. Bhavabhūti, however, like most Sanskrit poets, is unable to stop even when enough has been said. He

prolongs the agony almost to the verge of crudity; he omits no circumstance, no object animate or inanimate which he thinks can add to the effectiveness of the scene. But the method of Kālidāsa, like that of Shakespeare, is different. There is no exaggeration, no dwelling upon the subject, no beating out thin. Great sorrow uses few words. Not one of those who gather round the body of Cordelia utters a phrase; the emotion is tense, and there is no declamation to work it up. When Kālidāsa's Rāma hears of the popular rumours about his wife, his heart, tossed in a terrible conflict between love and duty, broke in pieces like the heated iron beaten with a hammer; but he does not declaim nor faint nor shed a flood of tears. He simply calls his brothers together and declares his stern resolve in a brief and dignified speech, bidding the faithful Lakshmaṇa take Sītā, whom he does not even see, into exile. It is not until Lakshmaṇa returns and delivers to him the spirited but sad message of his banished wife that we find the king in him breaking down and yielding to the man; but even here his eyes become dim with unshed tears, and only one short verse compresses the whole pity of the situation in just a few words.

When we turn from these two masterpieces of Kālidāsa and Bhavabhūti to the third great Sanskrit drama, the *Mṛichchhakaṭika* or the *Toy Clay Cart*, attributed to Śūdraka, we find ourselves descending, as it were, from a refined atmosphere of poetry and sentiment to the firm rock of grim reality. It is a strange world which this drama unfolds, a world in which thieves, gamblers, rogues, political schemers, mendicants, courtiers, police constables, house-maids, bawds and courtesans jostle with each other freely; and the love that it depicts is not the romantic love of Dushyanta and Śakuntalā, nor yet the deep conjugal affection idealized in Bhavabhūti's Rāma and Sītā, but, simply and curiously, the love of a man about town for a courtesan, which is nevertheless as pure, strong and tender. A fitting background is supplied to this strange love by the equally strange world in which it moves; and an inventive originality is displayed by linking the private affairs of the two lovers with a political intrigue which involves the city and the kingdom.

The *Mṛichchhakaṭika* is one of the few Sanskrit dramas which are not dramatic poems but possess distinctively dramatic qualities that should make a direct appeal to modern taste. In the history of Sanskrit literature the work is unique in many respects. Apart from the graphic picture it presents of some interesting phases of ancient life in India, the work is truly worthy of a great dramatist in its skilful handling of a

swift-moving plot of sustained interest, in its variety of incidents and characters, in its comparative freedom from the usual fault of over-elaboration, in its sharpness of characterization, in its use of direct and homely imageries conveyed in a clear, forcible and unaffected diction, in its witty dialogues, in its general liveliness and dramatic effect, in its mastery of deep pathos and in its rare quality of quiet humour. In spite of its somewhat conventional happy ending, it verges almost upon tragedy, and neither the plot nor the characters can be regarded as conventional. Not only does it eschew the banal theme of courtly love and intrigue but it is also the most human of all Sanskrit plays. A ten-act comedy of middle-class life, the scene is laid in a cosmopolitan city like Ujjayini. Characterized as a play " full of rascals," its whole host of despicable riff-raffs of society, who at any moment are capable of all kinds of daring acts from the stealing of a gem-casket to the starting of a revolution, furnish an excellent foil to the realistic yet romantic story of the love of a *nāgaraka* of breeding and refinement for a famous and beautiful courtesan. The drama is bold and original in conceiving these characters, but they are presented not as types but as individuals of diversified interest. They are living men and women drawn from all grades of society, from the high-souled Brāhmin to the low-down thief; and the drama includes, in its broad scope, farce and tragedy, satire and pathos, poetry and wisdom, kindliness and humanity.

Indeed, each of the twenty-seven minor characters possesses an individuality which is rare in the Sanskrit drama. But in the midst of this motley assemblage stand out prominently the hero and the heroine. The Śakāra Saṁsthānaka, with his ignorant conceit and brutal lust, presents an excellent contrast, but the author's power of effective characterization is best seen in his conception of the two main characters. The noble Chārudatta, a large-hearted Brāhmin by birth and wealthy merchant by profession, does not represent the typical *nāgaraka*, whose whole round of life consists of love and pleasure; for there is nothing of the gilded dandy and dilettante in his refined character, and his chief interest is not gallantry. There is a note of quiet self-control in most of his acts; and even in love most of the courtship is done by Vasantasenā. He is a young man of breeding, culture and uprightness, whose princely liberality had won the admiration of the whole city but had reduced him to lonely poverty. If the change of fortune has made him bitter, it has not made him a misanthrope, nor has it debased his mind; it has only taught him to take life at its proper value. Chārudatta is endowed

with great qualities, but like the conventional hero he is not made a paragon of virtue. He is by no means austere or self-denying. He is a perfect man of the world, who loves literature, music and art, does not disdain gambling nor share his friend Maitreya's bias against the heterae. He never assumes a self-righteous attitude; his great virtues are softened by the milk of human kindness. His youth does not exhibit indifference, and the most outstanding feature of his character is his quiet and deep love for Vasantasenā.

The wrong of this unconventional love disappears in the ideal beauty which gathers round it; and its purity, strength and truth make it escape degradation. Vasantasenā has neither the girlish charm of Śakuntalā nor the mature womanly dignity of Sītā. Witty and wise, disillusioned and sophisticated, she has seen much of a sordid world; she has yet a heart of romance, and her love is true and deep even in a social status which makes such a feeling difficult. Much wealth and position she has achieved by an obligatory and hereditary calling, but her heart was against it, and it brought her no happiness. Her meeting with Chārudatta affords a way of escape, but she is sad and afraid lest her misfortune of birth and occupation should stand in the way. It is a case of love at first sight, and for the first time she is really in love. The touch of this new emotion quickens rapidly into a pervading flame and burns to ashes her baser self. It is all so strange even to herself. She can yet hardly believe that she, an outcast of society, has been able to win the love of the great Chārudatta, the ornament of Ujjayinī, and asks, half-incredulously, the morning after her first union with her beloved if all that is true. She is fascinated by the lovely face of Chārudatta's little son and stretches out her arms in the great hunger for motherhood which has been denied to her. Her love makes her realize the emptiness of riches and the fulness of a pure and true affection. When the Śakāra threatens to kill her for not submitting to himself, and taunts her as "an inamorata of a beggarly Brahmin," she is not ashamed but replies: "Delightful words! Pray, proceed, for you speak my praise." Growing furious, the brutal and cowardly Śakāra takes her by the throat. She does not cry out for succour, but she remembers her beloved Chārudatta and blesses his name. "What, still dost thou repeat that name," spits out Śakāra, blinded by rage, as he throttles her; but on the verge of imminent death the name of Chārudatta is still on her lips, and she murmurs in a struggling voice: "My homage be to Chārudatta!"

THE SPIRITUAL OUTLOOK OF SANSKRIT GRAMMAR

We shall surely do grave injustice to the grammatical literature of India, if we are inclined to look upon Grammar only as a number of aphorisms serving us no other purpose than the formation and dislocation of words with which people are generally acquainted. In ancient India no enquiry was ever made that did not directly or indirectly aim at a higher realization of truth and a greater fulfilment of life. And no department of study seems to have been more fruitful than Grammar in this respect.

The grammatical dissertations of the Hindus were not confined to a narrow fold, nor were the Hindu grammarians content with mere formulation of rules for the guidance of words. It must be said to the credit of the *śābdikas*[1] that they succeeded in discovering a path of spiritual discipline even through the labyrinthine mass of grammatical speculations. Enquiries into the ultimate nature of *vāch* (speech) led them to a sublime region of *sādhanā*[2]—a region of perfect bliss and joy. The cultivation of Grammar gave rise to a spiritual vision which, so to speak, enabled the *vāg-yogavid*[3] to visualize Brahman in the "wreath of letters" (*varṇamālā*). Letters are denoted in Sanskrit by the same term (*akshara*) as is often applied to Brahman. A glance into the words in which *akshara* has been interpreted by grammarians of old will serve to open our eyes to the supreme importance of *varṇas*.[4] To the spiritual insight of Patañjali *varṇas* were not only phonetic types but glowing sparks of Brahman illumining the entire sphere of existence.

Besides its spiritual significance, Sanskrit Grammar seems to be the only branch of study that can claim a sufficient degree of scientific precision in its procedure. It is a unique record of the development of Indian mind in the domain of linguistic pursuit. It is not too much to say that the science of Grammar deserves a prominent place in the world of *śāstras*. It is called the "mouth of the Vedas" (*Śikshā*) and is intimately connected with the Vedas as one of the six *Vedāṅgas*. Grammar derives its importance from the fact of its being indispensable for understanding the Vedas. It is held that the study of Grammar is

[1] Grammarians. [2] Spiritual discipline.
[3] Knower of the secret of speech.
[4] *Mahābhāshya*, 1. 1. 2. Also *Vārttika*

a kind of religious penance (*tapas*) the result of which is immediately perceived (*Vākyapadīya*, I. 11). It is stated further that the cultivation of Grammar is a path which ultimately leads to the Pure Light of God (*op. cit.*). This is why Patañjali eulogized Grammar as the most important member of the *Vedāṅgas*. Bhartṛihari, the philosopher-grammarian, has not only raised the status of Grammar to the dignity of Smṛiti and Āgama, but went the length of asserting that " Grammar is veritably the door leading to final beatitude " (*op. cit.*). Grammar is also said to be the purest of all branches of learning (*op. cit.*).

The study of Grammar represents a remarkable phase of Indian culture. No other country can boast of having produced such an extensive literature in the field of grammatical speculations, and in no part of the world the study of Grammar was carried on with so much zeal and assiduity. According to the custom prevalent in ancient India, the Brāhmins used to read Grammar as soon as the sacrament of " holy thread " was over; and it was only when they became considerably conversant with Grammar that they took to the study of the Vedas (*Mahābhāshya*, 1.1.1). The necessity of making a thorough study of Grammar was even felt by the gods. Tradition runs that Indra took up the study of Grammar under the tutorship of Bṛihaspati.

We should not, however, forget the main issue. While paving the path for one's admission into other departments of study, the study of Grammar used to serve a still more beneficial purpose. Grammar in its religious and mystical speculations has been in line with the teachings of the Upanishads, reinterpreting the same doctrines of Yoga and *upāsanā* as are found in the sacred texts of India (*Yoga-sūtras*, 1.27-28).

In reviewing the history and development of grammatical speculations, the question that often demands elucidation is the question of spiritual significance of the study of Grammar: How may the study of Grammar be of any direct help to the spiritual inspiration of man? They labour under a pitiable delusion, who are trained to suppose that Grammar has nothing to do with the highest problem of our life. It was left to Patañjali and his followers to unlock the portal of a new kingdom of thought, so as to throw light upon the ultimate end of all enquiries into words. The *Mahābhāshya* portended the birth of a form of *sādhanā* in which *śabda* or eternal *verbum* has to be worshipped with all the reverence of a Divinity.[1] In order to attain union with Brahman

[1] Patañjali says that one should pursue the study of Grammar for the supreme object of attaining equality with the Great God.

or to get oneself completely merged in the Absolute, one is directed to take up the mysterious course of *śabda-sādhanā*.[1]

Patañjali seems to have been the first among the Indian grammarians to give a spiritualistic colour to the speculations of Grammar. The *Śabdabrahmopāsanā*, as is depicted in the Upanishads, had undoubtedly influenced his trend of religious thought. Then came Bhartṛihari, the author of the *Vākyapadīya*, who brought his robust genius and spiritual discipline to bear upon the problems of Grammar. A purely Vedāntic outlook permeates all his interpretations. We find in the *Vākyapadīya* the emergence of a developed form of *sādhanā* where the dominant note is more philosophical than grammatical. The last of the trinity is Nāgeśa who, following in the wake of Patañjali and Bhartṛihari, made an elaborate attempt to elucidate the philosophical side of grammatical dissertations.

The mysticism underlying the phenomena of speech was undoubtedly the aspect which made the deepest impression upon the grammarian. The utterance of sound is with him a vivid materialization of consciousness. To the grammarian *śabda* is not a lifeless mechanism invented by man. It is more than a mere sound or symbol. It is consciousness that splits itself up into the twofold category of *śabda* and *artha* (meaning), and what we call *vāch*, as the vehicle of communication, is nothing but an expression of *chaitanya* (spirit) lying within.[2]

Patañjali has taken notice of two kinds of words, namely, *nitya* (eternal) and *kārya* (created). By the former he understands the Supreme Reality that transcends all limitations of time and space. The attributes whereby the Vedāntins describe Brahman or Absolute have all been used by Patañjali in his interpretation of *nitya-śabda*.[3] He has more than once drawn our attention to this eternal character of *śabda*. This will give us some idea of the magnitude in which *śabda* was understood by the reputed grammarian whom tradition makes an incarnation of the Lord. His poetical description of *varṇas*, to which we have already referred, best illustrates the spiritual outlook of his mind. From the Śrutis he has quoted in laudation of *vāch* and *vyākaraṇa*, it is sufficiently clear that he was an ardent and devout

[1] While commenting on the *ṛich* (*Ṛig-Veda*, 10. 6. 71), Patañjali has laid stress on the necessity of making a thorough study of Grammar, because it renders one capable of attaining union with Brahman.

[2] Puṇyarāja under *Vākyapadīya*, 1. 1. 1.

[3] *Mahābhāshya*, 1. 1. 1.

worshipper of *vāch*,[1] belonging to that class of mystics who in their spiritual experience make no distinction between *parā vāch* and Para-Brahma. Patañjali used to look upon *śabda* as a great divinity (*mahān devaḥ*) that makes its presence felt by every act of utterance. He was a *yogin* whose inward vision (*prātibha-jñāna*) permitted him to have a look into that "eternal flow of Pure Consciousness undisturbed from outside."[2] He was a true type of Brāhmin who visualized the ultimate nature of *vāch* by dispelling the darkness of ignorance through the aid of his illuminating knowledge of *śabda-tattva* (*Pradīpadyota*). The worship of *vāch*, which has its origin in the Upanishads (*Chhāndogya*, 8. 2) and which found so prominent an expression in the Āgamas, was earnestly followed up by the *śābdikas*, particularly by Patañjali and Bhartṛihari. *Śabdabrahmopāsanā* (the meditation on Brahman conceived as sound), as we find in grammatical dissertations, is only a reproduction of the teachings of the Upanishads.

A flash of divine light is said to dawn upon a man who knows the secret relation between *vāchya* and *vāchaka*.[3] Patañjali has made mention of a verse that enjoins that he who knows the proper use of words is allowed to obtain eternal bliss in the next world (*Mahābhāshya*, 1.1.1). This is the consummation pictured to himself by a *vāg-yogavid*; and this is all that he longs to attain as the highest reward of his lifelong pursuit. The conception of *vāch* as a powerful deity (*vāg-devī*) and the glorification of the same as *akshara* or *udgītha*, resulted in most important consequences for the spiritual discipline of life. This is a mode of *upāsanā* from which the grammarians of India drew all their spiritual inspirations.

Words are not mere sounds as they ordinarily seem to be. They have a subtle and intellectual form within. The internal source from which they evolve is calm and serene, eternal and imperishable. The real form of *vāch*, as opposed to the external sound, lies far beyond the range of ordinary perception. We are told that it requires a good deal of *sādhanā* to have a glimpse of the purest form of speech. The *ṛich*, to which Patañjali has referred, bears evidence to this fact. *Vāch* is said to reveal her divine self only to those who are so trained as to understand her real nature (*Ṛig-Veda*, 10. 6. 71). Such was the exalted nature of *vāch* upon which the grammarian used to meditate.

[1] Puṇyarāja has alluded to that subtle and indivisible form of *vāch* which is undifferentiated from meaning.

[2] Helarāja under *Vākyapadīya*, 3. 32.

[3] That which is expressed and that which expresses: meaning and word.

Patañjali has also shown the religious consequence resulting from the study of Grammar. The application of words in conformity with the rules of Grammar is considered to be a kind of *dharma*. Though correct and corrupt words are equally significant in ordinary parlance, he strongly believes that the use of correct words is alone attended with religious merits (*Mahābhāshya*, 1.1.1).

Having regard to the facts under review one may be led to believe that the science of Grammar belongs to the class of religious texts, and it has actually received the same treatment at the hands of Bhartṛihari and others. It is, however, strange how a matter-of-fact science like Grammar could come to be regarded as such. An answer to this riddle is suggested by the author of the *Śabdakaustubha*. Just as one, he observes, is said to have fortunately received the much-coveted *chintāmaṇi*[1] in his search after *cowries*, so the grammarians, while dealing with the nature of words, preached the doctrine of absolute monism of the Upanishads and ultimately found Brahman as the essence of *vāch*. Grammarians, as we all know, started with the physical analysis of words and conceived sound as what clothes itself with *varṇas*. They did not, however, rest there but proceeded still further and on minute examination of internal phenomena, grasped the remotest form of sound, i.e. *sphoṭa*, as is manifested by sound, the eternal, indivisible and really significant unit of speech.

The doctrine of *sphoṭa*, as expounded and nourished by the grammarian, marks the climax of mysticism reached by Sanskrit Grammar. The assumption of a spiritual phenomenon like *sphoṭa*, to which all sounds are reducible and from which all meanings follow, furnishes a clue to the origin of sound. To the grammarian *sphoṭa* is indivisible (*akhaṇḍa*) and represents *chaitanya* in its purest form. Its sacred and lofty nature was much exaggerated by the grammarian so that it was finally identified with Brahman (Vaiyākaraṇabhūshaṇa). The conclusion at which the grammarians had arrived after all their speculations on *śabda-tattva* is this supreme identity.

Bhartṛihari, as a staunch advocate of *sphoṭavāda*, started with the proposition that *śabda-tattva* and *Brahma-tattva* are interchangeable (*Vākyapadīya*, 1.1). Though their procedure is secular and artificial to all appearance, the grammarians, says Bhartṛihari, had an eye to the reality of things. He has more than once sought to impress upon us how *avidyā* or negation of truth has been studiously resorted to by all

[1] A fabulous gem believed to fulfil any wish of its possessor

departments of study in their respective manners of presenting facts. But the grammarian succeeded by the grace of *sādhanā* in grasping the supreme *truth* though walking along the bewildering track of illusion. This was the triumph of their spiritual experience.

No grammarian seems to have gone farther than Bhartṛihari in harmonizing grammatical speculations with the sublime teachings of Advaita philosophy. All words and meanings, he holds, are but the apparently different aspects of one and same thing. He was thus conscious of that *mahāsattā* or Highest Universal which permeates all. He makes his Vedāntic position perfectly clear when he says: *sattā* represents the real essence of all things; it seems to be manifold in consequence of the diversity of objects; it is to be regarded as the *summum genus* which is denoted by all words, all *prātipadikas* (crude forms), verbal roots and suffixes like *tva* and *tal* (*Vākyapadīya*, 3. 33-34). We need not say that *sattā*, as spoken of above, is the eternal Supreme Soul of the Vedānta.

THE ORIGIN AND GROWTH OF TAMIL LITERATURE

I

During the past few decades various theories have been put forward regarding the original home of the Tamil people and the linguistic connections of the Tamil language. Dr. Caldwell, the pioneer of the study of the comparative grammar of the Dravidian languages, originated the Scythian theory classifying Tamil with the Turanian languages. This theory does not find much favour now, for it has been shown that the linguistic connection is more apparent than real, and that racially the Tamils had nothing in common with the Turanians. For similar reasons, the Mongol-Tibetan theory suggested by Mr. Kanakasabhai Pillai has also been given up. The Indo-African-Australian origin of the Tamils put forward by Messrs. Keane and Morris has a great deal of support behind it. Geologists assert that there was a vast continent extending as far as Africa and Australia and including within it South India, Ceylon and the Malay Archipelago. This lost continent of Lemuria, claimed to be the seat of the earliest civilization, now forms the bed of the Indian Ocean. Tradition handed down by Tamil literature supports the submergence of a vast tract of land south of Kumāri, the present Cape Comorin. Lastly, there is the Sumero-Accadian-Elamite theory by which the existence of linguistic and ethnic affinity between the Tamilians and the early inhabitants of the Euphrates and Tigris valley has been established beyond dispute. The civilization of the Mesopotamian valley has a special interest to students of Tamil culture, for the ancient Sumerians are said to bear most resemblance to the Dravidian ethnic type of India. The discovery of monuments belonging to the First Dynasty of Ur (3100-2930 B.C.) has proved to a certain extent that the records left by the scribes of ancient Sumer are not altogether legendary. The archæological finds at Harappa and Mohenjodaro may throw fuller light on the racial and cultural connections of the Sumerians and the ancient Dravidians, as well as on the antiquity of the Sumero-Dravidian civilization.

The commentator Nachchinārkkiniyār makes mention of an old Tamil king Nilam-taru-tiruvil-pediyon *alias* Mā-Kirtti who ruled for twenty-four thousand years. We who belong to a short-lived race of mortals, whose average span of life does not exceed the proverbial three score years and ten, refuse to see eye to eye with Nachchinārkkiniyār

when he makes this pre-diluvian monarch go through the dull routine of a king's life for such a long number of years. Although the tradition is unacceptable for purposes of historical investigation, it may not be uninteresting to seek for and discover its origin. The existence of parallel traditions in Sumerian history suggests the possibility of a common source. The king lists of Larsa give the names of eight kings before the deluge who reigned for periods ranging between 18,600 and 43,200 years.

Dr. Hall suggested the possibility of the Sumerians being an Indian race which passed to the valley of the Two Rivers. Says he, "The ethnic type of the Sumerians, so strongly marked in their statues and reliefs, was as different from those of the races which surrounded them as was their language from those of the Semites, Aryans or others; they were decidedly Indian in type. The face-type of the average Indian of to-day is no doubt much the same as that of his Dravidian race-ancestors of thousands of years ago. Among the modern Indians, as amongst the modern Greeks or Italians, the ancient pre-Aryan type of the head has survived (as the primitive type of the head has always done), while that of the Aryan conqueror died out long ago. And it is to this Dravidian ethnic type of India that the ancient Sumerian bears most resemblance, so far as we can judge from his monuments. He was very like a Southern Hindu of the Deccan (who still speaks Dravidian languages). And it is by no means improbable that the Sumerians were an Indian type which passed, certainly by land, perhaps also by sea, through Persia to the valley of the Two Rivers." The account given by Berosus in the third or fourth century before Christ appears to suggest that the early settlers of Sumer arrived by sea, bringing with them a fully developed civilization. This civilization may possibly have arisen in the submerged Tamil lands that extended to the South of Kumārī.

Sir John Evans in his presidential address to the British Association says, "Southern India was probably the cradle of the human race. Investigations in relation to race show it to be possible that Southern India was once the passage ground by which the ancient progenitors of Northern and Mediterranean races proceeded to the parts of the globe which they inhabit." In this connection, it may also be mentioned that the ancient Egyptians had a tradition to the effect that their original home was Punt, eastwards across the seas. Scholars are of opinion that as early as the fourth millennium before Christ there was commercial intercourse between the Tamil country and the Mesopotamian valley, and that the trade of South India extended to Egypt in the third millennium before Christ.

From the above it is clear that the Tamils are a very ancient race possessing a civilization which originated in prehistoric times and which has run its course in an unbroken continuity up to the present day. The traditional accounts conveyed to us by the old Tamil classics and the writings of the great Tamil commentators of medieval times concerning the antiquity of Tamilian civilization may not be discarded as altogether fanciful. The earliest of existing Tamil books exhibit a literary development, the perfecting of which might have taken several centuries. Consequently it is evident that a considerable number of old literary works have been irretrievably lost. It is really difficult to account for this wholesale loss except by agreeing with the traditional account that tells us that an angry sea swept away the Pahruli river, several ranges of hills and a goodly portion of the Pāṇḍya's territories, carrying away the accumulated literary treasures of several centuries. Let us now turn our attention to the earliest existing literary works.

II

Honour, friendship, devotion to duty, love of home and hearth, these are among the ideals that guided the life of the early Tamilians. These same ideals inspired their poetic utterances. The poetry they bequeathed to posterity is not a mere dream woven out of an idle fancy, but it is the record of human struggles and achievements, both in the field of action and in the realm of thought. What this ancient race felt and thought, throughout the long centuries of its existence, lies indelibly recorded in the pages of its literature. The configuration of the land has changed, the hills and rivers familiar to the ancient Tamilians have sunk beneath the ocean-bed, the waters of the Indian Ocean roll over the spots where proud Tamilian cities flourished, yet the songs of the bards of ancient Tamil land, passing down through the centuries, fall on our ears and awake in our hearts the selfsame rapture which they roused in the hearts of those who first listened to them.

The love of glory which characterized the princes and chieftains who lived in the early epochs of Tamilian civilization was, to a great extent, the cause of the generous patronage they extended to poets and minstrels. The songs of the "Scops" and "Gleemen" of those far-off ages, first sung in courts and banquet halls, in gruesome battle-fields and in the resting places of the dead, in lowly cottages and in pleasant hills and dales, have withstood the ravages of time and have come down to us in

the shape of eight anthologies and a collection of ten idylls, which together with eighteen smaller works constitute what are known as the Saṅgam classics. Some of the eighteen smaller works are of uncertain date and consequently are left out of consideration in discussions relating to early Tamil poetry. Before we proceed to discuss the chronology of early Tamil literature, we shall look into a few of the songs that have come down to us from the olden days. Much of the elusive charm associated with all good poetry would necessarily be lost in the process of translation, but that which could be rendered through the medium of a foreign tongue may yet suffice to enable us to look into the souls of these ancient singers. There is a rugged virility in the songs of the early bards, a virtue which we miss in the more polished compositions of later ages.

Here is a song by Kāri-kiḷār in praise of the Pāṇḍyan king Palyāgaśālai-Muthu-kuḍumi, mentioned in later records as one of the earliest kings of the Pāṇḍya dynasty. The epithet " Palyāgaśālai " means " of many sacrificial halls." This king evidently lived at that time when Vedic culture was first introduced into Southern India. He is mentioned as the first donor of *veḷvikuḍi*. The Tamil word *veḷvi* means sacrifice Incidentally this poem and other poems addressed to the same monarch (*Pura-nānūru* 6, 9, 12, 15, 64) throw a great deal of light on the civilization of the Tamils in this epoch. In a tone of benediction the poet says:

" North of the long range of the lofty snow-covered peaks,
South of Kumāri's turbulent dreaded stream,
East of the surf-beaten shores of the Eastern main,
West of the ancient Western sea,
Downwards below the sea-girt earth, the lowest of the triple worlds,
And upwards above the abode of the celestial cows,
May thy fame spread and thy awe-inspiring presence be felt.
May thy judgement be as unerring as the pointer of a balance.
May thy armies, thy subjects, thy wealth and counsel,
thy alliances and fortifications flourish as ever.
May thy vast forces press onwards urging the small-eyed elephants,
and break down the enemies' ramparts.
May the spoils of war be distributed according to the ranks of the
recipients,
May thy state-umbrella be lowered as thou goest round the temple
of the great three-eyed God, praised by the sages of old;
May thy head bend low before the upraised hands of Vedic sages,
when they pronounce words of benediction on thee.

May thy garlands fade by the smoke of destruction that arises from the cities stormed by thy soldiers;
May thy anger get appeased before the fair faces of court ladies, wearing shining strings of pearls.
O noble Kuḍumi, monarch of undiminished gifts,
All conquests are thine, thy subdued mind contains and possesses them all;
May thou live and prosper as the cool-rayed moon and the sun with its scorching and resplendent rays."

The poem gives us some glimpses of the public activities and private life of a ruling monarch of those far-off days.

The earliest epoch in the civilization of the Tamils is the age in which heroism was exalted to the position of a religion. Life in those remote times was strenuous and the hero who won renown by steady perseverance and indomitable courage either in the battle-field or in the more peaceful avocations of life was held up as the ideal to be followed. The acquisition of fame was considered to be a motive sufficient in itself for virtuous action and the performance of strenuous deeds of valour. Nevertheless there was a belief in a future existence. He whose valour was sung by bards here on earth, was considered to have earned sufficient merit for mounting the celestial car which carried the soul in its ascent to the abode of the Immortals. In evidence of this interesting conception let us quote a poem of Muthu-Kaṇṇan-Sāttān of Uraiyur addressed to the Chola king Nalaṅ-Kiḷḷi:

" The water-lily that springs from the mud puts forth a row of blossoms. Each flower is hundred-petalled and is of a brilliant hue. Faultless as these flowers are the sons of noble families; they are all alike in form and feature and in greatness of birth. Yet amidst them, the discerning eye marks out the few that would win the praise of poets. The many are destined to die unhonoured and unsung, fading away like the leaves of the water-lily. Sages say that the heroes whose praises were sung by bards on earth, would, when they depart on the completion of their goodly mission, mount the celestial car that moves onwards without a charioteer.

" O my dear liege, hast thou not observed the moon in the firmament, its waxing and waning, its absence and its reappearance? Does it not silently testify to the fickleness of fortune, to death and to rebirth? May thou, therefore, become generous-hearted and bestow thy gifts on the

indigent; may thy foes become hardened in their hearts, and lose in life the one great blessing it has to offer, the generous impulse to give" (*Pura-nānūru* 27).

The generous impulse to give was often carried to a fault by the princes and chieftains of ancient Tamil land. The story of Sibi, the Chola king who helped a dove in distress by proferring his own royal flesh as the necessary ransom, and the story of Kumaṇan, who was willing to give away his head to help a needy poet, are stories which every Tamil child ought to remember and cherish. Here is a song that emphasizes the same noble impulse. The poet is a ruling monarch, the Chola king Nalaṅ-Kiḷḷi whom we have already met or perhaps another of the same name. Referring to the foemen who had challenged him to battle, the monarch says:

"Softly approaching my presence, with humble supplications, let them beg a favour of me; then these vast lands, this heritage of mine, which I guard with the beat of war drums may not be deemed by me too great a gift to part with. Even my dear life I would give away to suppliants. But belittling my prowess, if they would cross my path, like the blind fool who stumbled upon the sleeping leopard, woe be to them; for I shall crush them down as the enraged elephant crushes down the shoots of bamboo plants. If I fail to carry out my purpose, let this garland that rests on my shoulders fall on the loveless unholy bosom of black-tressed courtesans" (*Pura-nānūru* 73).

The last sentence is characteristic as giving expression to the high regard which the old Tamilian had for fidelity in married life. This agrees with the teachings of the *Kuraḷ* and differs from the literary convention elaborated in the *Tolkāppiyam* of making the courtesan interfere in the smooth course of wedded love. This convention forms the basis of the poems grouped under *Maruttaṭiṇai* in the anthology known as *Kalit-togai*. Next to the love the Tamilian of olden days had for his partner in life, may be placed the love that he bore to his friends. The great friendship of Pisir-Antaiyār and Ko-Perum-Choḷan has been beautifully mentioned in poems 214 to 223 of the *Pura-nānūru* collection. For want of space we refrain from giving a translation of these poems.

The *Pura-nānūru*, an anthology of four hundred heroic poems, from which we have so far quoted is a national saga of the Tamilians. The names of many noble princes and great poets, as well as several incidents connected with their life, would have been entirely lost to us had they not been treasured up in this great anthology. The *Kalit-togai* containing

one hundred and fifty exquisite lyrics, the *Pari-pāḍal* which in its present form contains twenty-two "songs of praise" on Tirumal, Muruga, the river Vaigai and the city of Madura, the *Nartiṇai*, the *Aga-nānūru* and the *Kurum-togai* each of four hundred love poems, the *Aiṅguru-nūru* of five hundred short poems and the *Patirtu-pattu* or "Ten Tens" which in its present form contains eighty poems eulogizing eight Chera (Kerala) monarchs, are the other anthologies that have come down to us. The total number of poems in the eight anthologies is 2,352 and the total number of poets who contributed them is 535. Some of the poets may have more than one name and consequently the number we are able to count closely agrees with the traditional number 449.

The traditional accounts conveyed to us by the commentators of medieval times state that the last Saṅgam, the Literary Academy at Madura, lasted for a period of one thousand eight hundred and fifty years, during the reign of forty-nine Pāṇḍya kings and set its seal of approval on the compositions of four hundred and forty-nine poets. The chronology of the early Tamils has not reached such a finality as to enable us to make unassailable decisions. But from what we can gather from internal evidence and from the testimony of early Greek and Roman writers, such as Pliny (78 A.D.), Ptolemy (140 A.D.) and the author of the *Periplus* (70 A.D.), we can safely conclude that the last of the Cheras, Cholas and Pāṇḍyas referred to in the Saṅgam works ruled over South India some time about the end of the second century A.D. If we accept the traditional account regarding the duration of the Literary Academy at Madura, we shall have to fix its beginnings in the sixteenth century B.C. If the date of the *Mahābhārata* war is taken to be 1400 B.C. and if we accept the testimony of the great epic regarding the political and social connections between North and South India at the time of the war, we shall find that there is nothing improbable in holding the view that about a millennium and a half before the Christian era, South India was sufficiently advanced to possess a Literary Academy.

III

The ten idylls contain an aggregate of 3,552 lines and provide us with very valuable information regarding religion, social life, government, commerce, arts and crafts, music, dancing, courtship, manners and customs, feasts and festivals and the daily life of the people. The longest of these poems the *Madurai-Kāñchi* gives very vivid pictures of the city

of Madura, of its ruler and also of certain other cities and princes. The eighteen "smaller works" are ethico-didactical in character; the chief among these are the *Nālaḍiyār* and Tiruvaḷḷuvar's *Kuraḷ*. These works were designated "Kizh-kaṇakku," that is, "minor" or "smaller" works, probably because they were used as text-books in the Intermediate classes in the Buddhist and Jain medieval universities of Tamil land.

Tiruvaḷḷuvar, poet, philosopher and law-giver of ancient Tamil land, is one of those master-thinkers whose writings have a worldwide significance. The sage lived probably in the first half of the first century A.D., when Ugra Pāṇḍya the Great was ruling over Pāṇḍinaḍu and the Chola throne was occupied by Peru-nar-kiḷḷi who performed the *rājasūya* sacrifice. The contemporary king of Cheranaḍu was Cheramān Māvaṅgo. The three kings of this period were living in amity and there was peace in the land. The chieftain Atiyamān Neḍumān-Añji, his son Poguṭṭeḷini and Nāñjil-Vaḷḷuvan, a great patron of letters, also flourished about this time. The poetess Avvaiyār, who has addressed verses to all the kings and chieftains mentioned above, appears to be an elder contemporary of Tiruvaḷḷuvar. The great poets Kapilar, Paraṇar, and Nakkīrar probably had passed away from the scene of their earthly activities at the time in which Tiruvaḷḷuvar came into prominence. The authors of the twin-epics, the *Chilappadikāram* and *Maṇimekhalai* were possibly junior contemporaries. In the realm of religious thought, the influence of Buddhism and Jainism combining with the teachings of the Vedic religion was producing a harmonious synthesis which in course of time was to give birth to modern Hinduism as it evolved in South India. The Āgamas and the Yoga Philosophy, we have reason to believe, existed in the country in this remote age. They probably were treated as "Secret Doctrines." The freer social life of the heroic age was, at this time, giving place to the *varṇāśrama dharma* (scheme of duties according to caste and order of life) introduced from the North. A contemporary king's performing the *rājasūya* sacrifice testifies to the fact that kingship had attained a high standard of development. The period under consideration was certainly an age of intellectual ferment which demanded a revaluation of life's ideals. Tolkāppiyar, who lived in an earlier age, codified the social and civic ideals that existed at his time. These were found insufficient to meet the changes that had taken place in the modes of life, form of government, etc. A new formulation was needed and this was supplied by the profound thinker whose work carries the seal of authority from the time in

which it originated up to the present day. A careful perusal of the *Kuraḷ* would show that Tiruvaḷḷuvar has gathered his ideas and expression from the older Tamil poets and has marked on them the stamp of his own powerful personality. The universal elements in the *Kuraḷ* may by a careful analysis be separated from the essentially Dravidian elements and the essentially Aryan elements contained in it.

Many legends have gathered round the name of this great poet. One is the legend concerning his birth. We do not know how far these legends are tenable. Merely from the name Vaḷḷuvan, and from the reference made by the author of *Jñānāmṛitam*, a comparatively recent work, we may not conclude that the poet was of low origin. The Vaḷḷuvars were not considered low. A contemporary chieftain eulogized by many great poets and befriended by ruling monarchs is known as "Nāñjil-Vaḷḷuvan," or "Vaḷḷuvan, lord of the Nāñjil hill." It is more plausible to consider the poet as a kinsman of the said chieftain. The chieftain as well as the poet may have arisen from the old clan of Vaḷḷuvars who sounded the great drum and broadcasted the king's proclamation. The ripe wisdom in matters of statecraft exhibited in the *Kuraḷ* cannot be explained by any other means than by seeing the poet as a man who had not only a deep theoretical knowledge of political philosophy but also as a person who was well acquainted with the practical details of administration. In the first chapter and a few other chapters of the book we are face to face with a mystic of profound spiritual realization, a veritable *rājarshi*. The lessons given in the chapter on "The Realization of Truth" gives the essentials of Yoga philosophy in a nutshell. The chapters on "Love" which form the third part of the book are in truth the most exquisite gems that adorn the Tamil Muse.

From the *Kuraḷ* we pass on to the two epic poems—the *Chilappadikāram* and the *Maṇimekhalai*; the former, tragic in its setting, shows the inexorable working of destiny, which in this case had for its victim an extremely wealthy and accomplished young merchant of Kāviri-pumpaṭṭinam. The bait which destiny held before the eyes of Kovalan, the young merchant, was a pretty dancer, Mādhavī, the daughter of Chitrapati. The inevitable meeting takes place on the occasion of the *début* of the dancer. Kovalan, forgetting his faithful wife Kaṇṇagi, spends some years in the company of the dancer. Destiny successfully contrives and breaks off the bonds of love that existed between Kovalan and fair Mādhavī. Accompanied by his wife Kaṇṇagi, Kovalan reaches the city of Madura, the capital city of Pāṇḍyan monarchs. There he goes

out into the street to sell an anklet belonging to his faithful wife. Destiny appears again in the guise of a crafty goldsmith and accuses Kovalan of theft for which he is condemned to death and is beheaded. The aggrieved wife appears before the Pāṇḍyan monarch, breaks her other anklet, scattering the rubies contained in it and thereby proves the innocence of her husband. The monarch smitten with grief dies on his throne. Kaṇṇagi departs by the western gate and on the fourteenth day her pure spirit ascends to heaven. The hillmen who witnessed the ascent of Kaṇṇagi in the celestial chariot, report the matter to the Chera king Śeṅguṭṭuvan. The monarch builds a temple in honour of the chaste lady, who spent her last days within his territory. To make the image of the new goddess, a stone from the Himalayas was considered necessary. Consequently, the monarch marches northwards with an expeditionary force and with the assistance of his friends "Nūrtuvar Kannar"—the Hundred Karṇas—he crosses the Ganges with his army, defeats two kings, Kanaka and Vijaya, who opposed him, and makes them bear on their head the stone for making the image of the goddess. Such in short is the story of the poem. The author Ilan-ko Adikal, brother of Śeṅguṭṭuvan, brings in such a wealth of details that the work is a storehouse of information. It is one of the much discussed of Tamil books. From the references contained in this book, it was found possible to reconstruct a system of music which became obsolete in the twelfth century A.D. and lay hidden up to the present time. The *Maṇimekhalai*, which is the sequel of the *Chilappadikāram*, was written by Kulavaṇiagan Sāttanār, who narrates further incidents connected with the life of Mādhavī, her daughter Maṇimekhalai, Kovalan's parents and Kaṇṇagi's parents and friends. Maṇimekhalai listens to religious truths expounded by teachers of various sects and finally embraces the *Buddha-dharma*. The philosophical portion of the *Maṇimekhalai* has attracted the attention of many scholars.

Concerning the date of composition of the *Chilappadikāram* and the *Maṇimekhalai* there has been a great deal of controversy. Those who are desirous of arriving at some decision in this matter would do well to take their stand on some fully established date, study the political conditions, the religious beliefs, the philosophical outlook, the social customs and the general culture of that date, and compare the whole picture of life in Tamil land thus obtained with the life depicted in the twin epics. By doing so they may avoid the many pitfalls and errors

which necessarily lie in the path of those who impatiently rush in without much circumspection.

The age of Appar and Jñānasambandhar, which falls in the first half of the seventh century A.D., is one of the established landmarks in the history of Tamil literature. At this date the land is under Pallava domination, the names of places and persons have become almost wholly Aryanized, some of the deities worshipped in the Saṅgam age have fallen into disregard and other deities have taken their places, and the social customs have undergone profound modifications. After viewing the picture of life in Tamil land in this period, if we turn our eyes to the twin epics, we see a very different picture. Kings of the old Chola, Pāṇḍya and Chera dynasties are still secure on their thrones; the Pallavas and the Kalabhras have not come into the history of South India. Kāviri-pum-paṭṭinam continues to be the greatest sea-port of the Cholas, the worship of Gaṇeśa has not yet been introduced, the white god "Vāliyon" is as prominent as in the olden days, and the social customs approach those of the heroic age. Thus seeing the complete picture, we feel that the epics are much closer to the heroic age than to the age of Jñānasambandhar. We find that they should be placed at least two or three centuries prior to the date of Tirumūlar, the mystic poet, and Kāraikkāl-Ammaiyār, the saintly poetess, both of whom lived long before the time of Jñānasambandhar. The picture of the great cities of Kāñchī and Pukar (Kāviri-pum-paṭṭinam) as depicted in the poems clearly indicates to us that the Tamil lands of that time were in possession of their political independence. The old heroic age, the glories of which are so well described in the Saṅgam classics and the twin epics, comes to a close some time in the third century A.D. when Kāñchī passes into the hands of the Pallavas. The four centuries that follow form a period of darkness, the gloom of which lifts a little by the light shed on it by the two great mystics, Tirumūlar and Kāraikkāl-Ammaiyār. These were the harbingers of the glorious dawn that begins with Jñānasambandhar, the dawn that was to lead on to the noonday glory of Chola expansion. Before we pass on to Jñānsambandhar's age, we should at least make a passing mention of Ko-Cheṅgaṇān, "the red-eyed Chola," the last of the early Cholas and the builder of a great many temples. We should also mention the name of Poigaiyār, a contemporary poet who has been identified with Poigaiyāḷvār, one of the three early Vaishṇava saints who are known collectively as the "First Āḷvārs." The songs of the early Āḷvārs exhibit a catholicity which we miss in the

sectarian utterances of later days. Ko-Cheṅgaṇān and Poigaiyār belong to the end of the second century. The date of Tirumūlar and Kāraikkāl-Ammaiyār should be somewhere in the third or fourth century A.D.

IV

The end of the sixth century sees the resuscitation of the Pāṇḍyan kingdom. In the early part of the seventh, Jñānasambandhar, the child-saint of Śiyāḻi, appears on the horizon. While still a child of three, he gets a vision of the Divine Mother and pours out in melodious verse the joy and devotion that overflowed his heart. O what a band of devotees gather round this divine child! There was the harp-player Nīlakaṇṭha and his wife Mataṅga-Chūḻāmaṇi, the singer. They set to music the beautiful lyrics composed extempore by the young saint. Nīlakaṇṭha and his wife were of the untouchable caste. As usual, the saint breaks the barriers of caste. We see the party seeking shelter in the house of Na-nakka, an orthodox Brāhmaṇa who rises to the occasion and accommodates the untouchable couple in the most sacred room in the house, the room where the holy fire is kept. Then we witness the meeting of the youthful saint and his elder contemporary, the saint Tiru-Nāvuk-Araśar, whom the child saint calls "Appar," which means "father" and by which loving name the old saint is referred to, up to the present time. Appar with his eyes overflowing with tears gives out soul-stirring devotional songs. We see the young saint again in Madura at the court of the Pāṇḍya king. He has gone there on the request of the queen and the prime minister. There the saint defeats the Jains in controversy and effects the reconversion of the Pāṇḍya king. The lyrics composed on this occasion exhibit the strength achieved by surrendering oneself to the divine feet of the Lord. Later on, all these lyrics were collected and arranged. Sambandhar's poems have been arranged in three volumes, Appar's in another three volumes and the lyrics of Sundarar, a later saint, have been arranged in one volume. These seven volumes form the *Devāram*. The *Devāram* hymns contain sufficient internal evidence to reconstruct the lives of the saints. As we shall see later, these lives have been systematically presented in the *Periyapurāṇam*, a book written in the beginning of the twelfth century A.D. Saint Appar was persecuted by the Pallava king Mahendra-varman, who afterwards became a Śaivite.

Close upon this period of "Śaivite religious revival," there appears a great Vaishṇava saint, Periyāḻvār, whose beautiful songs addressed

to Śrī Krishṇa form part of the devotional poetry of Śrī Vaishṇavism. Periyāḷvār's daughter Āṇḍāl, who becomes the chosen bride of Śrī Raṅganātha, is a poetess of a very high order. Her love for her divine Spouse expressed in matchless verse exhibits a depth of feeling which is seldom met with in other works of a similar nature. The Āḷvārs and the Nāyanmārs breathed new life into the people and roused them from their lethargy. The pessimistic attitude of mind fostered in the Jain and Buddhist monasteries gave place to a living faith. The glorious example of the saints induced men and women to lead a life of service and selfless devotion. The old dynasties of Tamiḷakam felt their own strength and refused to pay tribute to alien monarchs. By successful encounters they not only freed themselves from the foreign yoke but also subdued their erstwhile rulers.

In the first quarter of the ninth century A.D. the saintly king Cheramān Perumāḷ Nāyanār was ruling over the Kerala country. About this time lived saint Sundarar, the third of the Śaiva *āchāryas*. The Tamil saint and the Kerala monarch were good friends and both have enriched Tamil literature. Tradition says that the saint and the monarch went on a pilgrimage to Mount Kailas. The year of the departure of Cheramān Perumāḷ (825 A.D.) is the beginning of the Kollam era.

The date of Saint Māṇikkavāśagar, the fourth of the Śaiva *āchāryas*, is not definitely fixed. He is probably a contemporary of Saint Sundarar. Tirumaṅgaimannan, Toṇḍaraḍippoḍi and Tirupāṇāḷvār, three Vaishṇava saints, probably belong to the same time. Kulaśekhara Āḷvār, the saintly monarch of Kerala, belongs to an earlier date. This age which saw the advent of so many great saints had also some great monarchs. Vijayālayan, the founder of the imperial line of the Cholas, ascended the throne in 849 A.D. His grandson Parāntakan Chola, who covered the roof of the Chidambaram temple with gold plates, is lovingly remembered in Śaiva Tamil literature. Kaṇḍarādityan, the author of *Tiru-Isaippā* is the third in succession from Parāntakan. Karuvūr Devar, another *Tiru-Isaippā* author, lived after the building of the temple of Rājarājeśvara, which was very probably completed by the end of the tenth century A.D. Nambi-Āṇḍār-Nambi, who gave brief life-sketches of the Śaiva saints, probably lived in the time of Rājarāja the Great (A.D. 985-1014). The great Vaishṇava saint Nammāḷvār's date is not definitely known; some scholars place him in the tenth century A.D., while others take him up to the fifth century A.D. Madhura-kavi, of course, is a contemporary of Nammāḷvār. The songs of the Āḷvārs and

Nāyanmārs have played an important part in deciding the future course of literary development.

The expansion of the Chola empire under Rājendra I (A.D. 1012-1044), his expeditions by land and by sea, the commercial prosperity of the country, and the cultural contact with other nations brought about a fresh blossoming of the Tamilian genius. All over the country there was unprecedented literary activity. During the next three centuries, we find the Chola monarchs extending a generous patronage to poets and men of letters, and some of the greatest literary works in the Tamil language were written during this time. Jayam-koṇḍān's *Kalingattu-paraṇi*, Sekkiḷār's *Periyapurāṇam*, Kamban's *Rāmāyaṇam*, Oṭṭakkūttan's *Ulā*-poems, Buddhamitran's *Vīraśoḷiyam*, Pavanandi's *Nannūl*, to mention only a few, are certainly among the greatest books in the Tamil language.

The first Tamil work, which on account of its subject-matter and literary form may be designated a *mahākāvya*, is the *Jīvaka-Chintāmaṇi* a work based on the Sanskrit *Kshatra-Chūḍāmaṇi*. The author, Tiru-takka-ma-muni, was a Chola prince, who had become a Jain monk. The adventures of prince Jivaka are not very interesting in themselves; nevertheless the book was eagerly read by contemporary men of letters, for it had brought into the language two new instruments: the Sanskrit *kāvya* form and the *viruttam* metre, both of which found a wide use in the hands of the literary men of succeeding generations. A translation of the *Mahābhārata*, of which fragments only exist at the present time, belongs to a little earlier date. It is in the ninth century A.D. that Tamil first began to borrow Sanskrit literary forms. In earlier literature the influence of Sanskrit is scarcely noticeable, except here and there in the vocabulary, wherein the borrowing was mostly restricted to philosophic terms.

Jayam-koṇḍān's *Kaliṅgattuparaṇi*, which describes the success of Tamilian arms in the Kaliṅga war and incidentally throws a great deal of light on contemporary Chola history, was written in the latter part of the eleventh century. The work is a unique piece of composition, combining as it does extremely vigorous action with exquisite lyric form. *Periyapurāṇam*, the masterpiece of Sekkilār, is noted for its chaste diction and depth of religious feeling. It was written in the early part of the twelfth century.

All the above works were preparing the way for Kamban's *Rāmāyaṇam*, which in several respects exhibits the high-water mark of

Tamil poetry. Kamban was born in Tiruvaḷundūr in the Chola country. He was the son of one Āditya; very little is known of his early life, except the fact that he came under the patronage of Saḍaiyappa, a wealthy Veḷḷaḷah. Tradition states that the Chola monarch, probably Kulottuṅga III (1178-1216), commanded him and also Oṭṭakkūttan, the court poet, to write a Tamil version of Vālmīki's *Rāmāyaṇa*. All the beautiful incidents connected with the composition and publication of the great poem are intensely interesting, but the limitation of space forbids us to enter into them. *Kamba-Rāmāyaṇam* truly reflects the religious thought of the age in which it was written. The old cult of heroism, which regarded valour as the supreme virtue and immortal fame here on earth as the equivalent of immortality hereafter, forms the basis of the lives so beautifully depicted by Kamban. The great God who forgot His divinity on hearing the wails of a suffering world walks in the midst of kings, outcastes and recluses as a man among men, sharing their joys and sorrows. In him the Kshatriya ideal of life finds its fullest manifestation. Kamban has pictured this ideal to its utmost perfection. We find contemporary kings and princes of the royal blood vying with one another in honouring this great poet, who stands unparalleled as the poet of manliness and Kshatriya prowess.

V

We pass on and come to an age in which men's minds turn once more to philosophical speculations. Meikaṇḍān appears on the scene. The same divine power which made the child of Śiyāḷi (St. Jñānasambandhar) utter words of wisdom couched in the language of poesy, speaks once more through the tongue of the child of Tiruvennainallur. The inspired message is now given in the language of philosophy, the language of dialectics and abstract thought. The message is, however, the same. It is not mere scholastic philosophy that Meikaṇḍān expounded. The first half of *Śivajñānabodham* discusses the nature of bondage and the second half points out the path to the attainment of freedom. Herein we find a synthesis of pure reason and yogic mysticism which transcends the bounds of reason. Sakala-āgama-paṇḍita, the Brāhmaṇa philosopher, surrenders himself at the feet of this Veḷḷaḷah boy and becomes his first disciple taking the name of Aruḷ-nandi-Śivāchārya. He composes the *Śivajñānasiddhiyar* and *Irupa-irupathu* and hands over the torch of knowledge to Marai-jñānasambandhar, who

hands it over to Umâpati-Sivāchārya. Umāpati is the author of no less than eight works on Śaiva Siddhānta, of which one, the *Saṁkalpa-Nirākaraṇa*, probably the last, was written in the Śaka year 1235.

About the same time, Malik Kafur occupied the city of Madura and the subsequent centuries witness the decline and fall of the Pāṇḍyas and the Cholas. Foreign invasions, civil wars and internecine intrigues almost exhausted the energy of the hardy Tamil race. With the fall of Vijayanagar, Hindu independence became a memory of the past and a sort of mental stupor came upon the people: they began to dream of past glories. The world in which they lived and moved and had their being, had no attraction for them: they directed their thoughts to regions situated far beyond the mortal ken. Despair seized the heart of the people; they felt tired of life and shrank in horror from the tortures that might await them on the other side of the grave. The old Tamil warrior, who laughed at death, never thought of inventing a hell; the Buddhists introduced a few; but the priests who came into prominence in this age of degradation ushered into existence twenty-eight crores of hells. The heroic legends of the Saṅgam age were almost forgotten; the Jātaka tales imported by the Buddhists were metamorphosed into new shapes; stories centring round the sage Agastya, episodes from the great Sanskrit epics and tales fabricated by priestly story-tellers to illustrate the inexorable working of *karma* supplied the material for unusually long poetical compositions called *Sthala-Purāṇas*. The vast majority of these compositions are but the echoes of the only consolation which priestcraft has to offer to a fallen and degraded people. They exhort the readers not to mind their present trials and tribulations, but to make regular offerings to the deities, bathe in the sacred waters, observe fasts and prepare themselves to gain safe entrance into the portals of heaven, ordering out their present life in strict conformity with the dictates of their rightful spiritual guardians, the priests.

Monasteries sprang up all over the country. These were not all of one persuasion. All the various sects of Hinduism had their own *maṭhs*. They served the very useful purpose of preserving the old manuscripts and keeping inextinguished the lamp of learning handed down to them through the centuries. Tiruvaḍuturai Ādīnam, which claims an unbroken line of succession from Meikaṇḍān, has preserved the Śaiva Siddhānta philosophy and has also produced a school of grammarians well-versed both in Sanskrit and Tamil. There were Vedānta *maṭhs* in various parts of the country, where instruction was imparted through the

medium of Tamil. Virai-Āḷavandār, Śrī Paṭṭar, Tatva Rāyar and Kaṇṇuḍaiya Vaḷḷalār are among those who have enriched Tamil literature with Vedāntic thought. The Vaishṇava *maṭhs* were instrumental in bringing out commentaries on the *Divya Prabandhams*. Kumāraguru-para Svāmigaḷ, the gifted poet and founder of the Tirupanandāḷ Ādinam, Śivāgra Yogigaḷ of Sūryanārkoyil Ādinam, and Turaimaṅgalam Śiva-prakāśa Svāmigaḷ have written standard works in Tamil.

Towards the end of the seventeenth century, Father Beschi, an Italian Jesuit priest, better known in Tamil land as Vīra-ma-munivar, was preaching the doctrines of Roman Catholic Christianity and was creating a Christian Tamil literature. Omar and others of the Mohammedan faith were enriching Tamil with Islamic thought. Piḷḷaiperumāḷ Iyengar was adding to Vaishṇava Tamil literature. Tāyumānavar, the mystic saint, sets at ease the warring schools of Vedānta and Siddhānta by pointing out the harmony that underlies the two schools of thought. A century later comes Rāmaliṅga Svāmigaḷ whose devotional hymns are such as would melt the stoniest of hearts. Ārumuga Nāvalar appears in Jaffna and initiates a new school of Tamil prose. The general awakening in Bhāratavarsha rouses the South from its slumber. The message of harmony propounded by Swami Vivekananda, representative of Hinduism to the World's Parliament of Religions, brings new life to all classes of people. The gloom that overshadowed the country during the past four centuries is slowly passing away and a new dawn is in sight.

The harbinger of the approaching dawn is our latest poet Subrahmaṇiya Bhāratī. He is essentially a religious poet. With religious mysticism he combines an unbounded love for the poor and the downtrodden. The poems that he addresses to Śrī Kṛishṇa are as sweet and soul-stirring as any that we meet with in ancient literature; the hymns to Śakti are grander than the old hymns addressed to Kortavai. The charm of his lyrics, and the dignified tone of his patriotic songs have endeared him to his people. The healthy outlook on life underlying his poems has a universal appeal. He views humanity as a whole and stands ready to embrace the North and the South, the East and the West, the Brāhmaṇa and the outcaste, as well as the educated and the illiterate. May the Tamil people, the inheritors of a glorious civilization, view the world with the eyes of Bhāratī, their latest poet, and rising above narrow sectarianism and petty social conventions, march on the path that will lead them to the Divine Spirit, which is the source of all goodness, beauty and truth.

ERRATUM

In page ix line 30 *for* BADRINARAYANA *read* KEDARNATH

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